

DIPTERA OF AUSTRALIA.

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PART VI.—THE CHIRONOMIDÆ.

(Plates XI.-XIV. and XIV. *bis*).

The descriptions of eight species of Australian Chironomidæ have hitherto been published, while four species of *Chironomus* mentioned by Walker in his "Notes" appear only to have received names. The described species include seven species of *Chironomus*, six by Walker and one by Macquart; and *Ceratopogon rhynchops*, Schiner; all but the latter are described so inadequately as to be quite unintelligible. To these I now add descriptions of sixty-four new species, distributed as follows:—*Chironomus* 21, *Orthocladius* 5, *Camptocladius* 5, *Doloplastus* (gen.nov. allied to *Chironomus*) 1, *Tanytarsus* 7, *Metriocnemus* 1, *Tanypus* 1, *Isoplastus* (gen.nov. allied to *Tanypus*) 3, *Procladius* (gen.nov. allied to *Tanypus*) 2, *Leptoconops* (gen.nov. allied to *Ceratopogon*) 1, and *Ceratopogon* 17, bringing the total up to seventy-two.

The Chironomidæ, or Midges, constitute one of the most richly represented families of the Nematocera, both in regard to species and individuals. It is principally based on the three original genera—*Chironomus*, *Tanypus*, and *Ceratopogon*, characterised by Meigen in 1803, but has subsequently been subdivided into numerous genera. Our knowledge of the family is at present in a very unsatisfactory state, owing principally to the fact that among those who have contributed towards the literature of the group, only a very small number have bestowed upon their work the unstinted labour and precision requisite in treating with such extremely approximate forms. We find that the characters regarded by one author as most important to notice are held in

little or no estimation by others. Those under the latter category are mostly transient describers, who, in the majority of cases, make the species they describe perfectly undeterminable through their insufficient acquaintance with the peculiarities of even the genus to which they *possibly* correctly refer them, and their ignorance of the systems previously elaborated by authors who have perhaps, like Winnertz, devoted years of most careful study in ascertaining the importance and unimportance of the structural characters presented by the species. Consequently just those peculiarities necessary to be pointed out for the correct identification of a certain insect are often quite omitted, and what is sometimes called the description of a species will apply equally well to all the species in the genus, or even to those of allied genera.

Schiner in 1868 (Novara Exp. Dipt. p. 24) recognised sixteen established genera as belonging to this family, not counting his own genus, *Telmatogeton*, created in 1866. The known species of the world were set down as numbering 669, of which 551 occur in Europe, 93 in America, 5 in Africa, 13 in Asia, and 7 in Australia (to which latter *Ceratopogon rhynchops*, Sch., must be added). As far as I can ascertain, a very inconsiderable number of species have been described during the last twenty years, and these principally belong to the genus *Chironomus*. About half the known species are referred to the genus *Chironomus* (though many of them should be removed to the genera subsequently derived from it), and are of unlimited distribution; but as far as has been ascertained, it principally predominates in northern and temperate latitudes. The species of *Chironomus* and closely allied genera now described from Australia constitute the majority of the members of this group as far as its representatives are known, but it is premature to generalise upon the distribution of these or any of the other genera until a great deal more collecting has been done, not only in the other colonies, but also in the vicinity of Sydney. Judging by the result of limited research the number of unknown species,

and perhaps genera, might be very considerable. It is to be regretted that many of the entomologists of this and the other colonies do not more endeavour to extend the knowledge of our least known orders by submitting specimens to those who are striving to work up particular groups.

Tanypus and *Ceratopogon* appear to have a distribution equally as wide as that of *Chironomus*, and include by far the greater number of the remaining species. Doubtless many species of these small flies have been overlooked even in the most thoroughly worked countries.

No New Zealand species of Chironomidæ appear to have been described.

The Midges, like the Culicidæ, may be often seen hovering in the air in great swarms, especially towards evening. As the larvæ and pupæ mostly dwell in water, it is in such localities that the perfect insects are most numerous. Many species may be obtained by the sweeping-net among grass, etc., and others are commonly met with in caves and similarly shady retreats. As far as my observations go, most of these insects are not lovers of sunshine; the species of *Ceratopogon*, however, are often found in sunny situations. Stagnant waters generally teem with the larvæ of *Chironomidæ*. Some of the larvæ are commonly known as blood-worms on account of their colour. The larvæ of *Chironomus stercorarius*, Meig., reside in dung. Both larvæ and pupæ of different species often exhibit marked variations of structure. The habits of *Tanypus* and closely allied genera mostly resemble those of *Chironomus*; the larvæ are often found in swampy places and about the stems of aquatic plants. The larvæ of *Chironomus oceanicus*, Pack., has been obtained from the depth of twenty fathoms in Eastport Harbour, Maine, and in Salem Harbour; and the pupæ and larvæ of a *Tanypus* or allied genus were found in great numbers by Packard in a salt-water lake in California. The genera *Halirytus*, Eaton, and *Psamathiomys*, Deby, have been proposed for the reception of marine Chironomidæ with rudimentary wings. The first was discovered at Royal Sound and

Swaint's Bay, Kerguelen Island, the second in abundance at Biarritz, in the south of France, in both cases by their describers. A species of *Chiromomus* which emits a strong phosphorescent light is reported from a locality near Lake Aral. The females of several species of *Ceratopogon* are bloodsuckers, and capable of inflicting very painful wounds; these annoying insects are particularly numerous in Australia and generally go by the name of "Sand-flies." Their "bites" are quite as severe as those of the mosquitoes, and I am told that in some parts of this country the cattle are dreadfully attacked by them and are sometimes almost driven frantic by the irritation of their wounds. It is possible, however, that the insects referred to really belong to *Simulium*. The larvæ of *Ceratopogon* reside in water, in the ground, in manure, under the bark of decaying timber, etc. Some are said to be carnivorous, devouring the larvæ and pupæ of other insects.

CLASSIFICATION.

Meigen (Syst. Besch. I. 1818, p. xxxiv.) and Macquart (S. à B. Dipt. I. 1834, p. 41) included in the then known genera of the present family the tribe Tipulariæ culiciformes; Macquart's diagnosis of the group and classification of the genera stands as follows:—

1st Tribe Tipulaires culiciformes, *T. culiciformes*, Meig.

Chars.—Antennæ filiform, in ♂ generally plumose, in ♀ pilose, each inserted in a disciform elevation. Eyes lunate, separated in both sexes. No ocelli. Thorax generally with three elevations; metathorax large. Abdomen of eight distinct segments. Wings recumbent; discoidal cell wanting; interior basilar often confounded with the second posterior; generally one marginal, one sub-marginal, and three posteriors.

A. Antennæ plumose to the extremity.

B. Legs inserted at equal distances; pectus little prominent.

Genus 1. CORETHRA.

BB. Anterior legs inserted a distance from the others ; pectus very prominent.

C. Terminal joint of the antennæ very long in ♂.

Genus 2. CHIRONOMUS.

CC. Penultimate joint of the antennæ very long in ♂.

Genus 3. TANYPUS.

AA. Antennæ plumose at their base only, or bare.

D. Antennæ plumose in ♂.

Genus 4. CERATOPOGON.

DD. Antennæ without plumes. Posterior legs very long.

Genus 5. MACROPEZA.

The genus *Corethra* should properly have been placed among the Culicidæ, a position it now occupies ; the others are typical genera of the Chironomidæ. Since Macquart's work numerous genera have been established, and many have been erected upon such slender grounds as to be quite worthless. *Forcipomyia*, *Palpomyia*, and *Serromyia*, Megerle (in litt.), *Prionomyia*, *Sphæromias*, and *Labidomyia*, Stephens, *Culicoides*, Latr., and *Heteromyia*, Say., might be considered sub-genera of *Ceratopogon*, but I agree with Loew that this division has not been executed in a sufficiently satisfactory manner. By it, some very subordinate characters would be raised to sub-generic rank. Rondani's genera *Apogon*, *Serromyia*, and *Alasion* are insufficiently characterised. Philippi's genera *Podonomus*, *Psychophæna*, *Spaniotoma*, *Penta-neura*, *Tetraphora*, and *Heptagyia*, of which he referred only the first-named to its correct family, are poorly described, and another examination of the types may prove some of them unwarrantable

innovations. Van der Wulp in 1873 split up the genus *Chironomus* into six genera, the leading characters of which are shown in the covering and venation of the wings, and joints of the legs; all these divisions are very useful and appear quite tenable. Besides the above-mentioned there are several other genera by various authors, some of which are unknown to me; their names, however, appear in my list of genera.

Westwood in his generic synopsis (Class. Ins. II. 1840), arranges the genera after much the same manner as Macquart, but adds more particulars about the joints of the antennæ, and introduces the sub-divisions of *Ceratopogon* proposed by Megerle, Latreille, and Stephens as genera.

Family 2. TIPULIDÆ, Leach. (Tipulides, Macq. H.N. Dipt.)

Sub-family 1 Chironomides, Westw. (Culiciformes, Latr., Macq.)

Corethra, Meig. *Chironomus*, p. Fab., 3 sp. *Ch. plumicornis*, Fab.

Antennæ ♂ plumose to the tip; legs placed at equal distances apart; sternum not prominent. Steph. pl. 42, fig. 1.

Chironomus, Meig. *Tipula*, p. Linn., 91 sp. *C. plumosus*, L. Curtis, 90.

Four hind-legs at a distance from the others; sternum prominent; last joint of ♂ antennæ longest (fig. 124 8).

Tanypus, Meig. *Chironomus*, p. Fab., 26 sp. *T. monilis*, L. Curtis, 501.

Antennæ 14-jointed in both sexes, penultimate joint longest; sternum prominent; four hind-legs wide apart.

Sphæromias, Steph. ———, 6 sp. *Sph. albomarginatus*, Curtis, 285.

Antennæ slender, basal joint globular, eight following joints short, five terminal joints long; eyes emarginate; trophi fully developed.

Ceratopogon, Meig. *Chironomus*, p. Fab., 18 sp. *C. stigma*, Meig.

Antennæ ♂ plumose at the base, five terminal joints elongated, simple in ♀; all the femora simple; second joint of the palpi longest; legs of nearly equal length; two sub-marginal cells. Meig., Zw. i. pl. 2, fig. 18.

Palpomyia, Meig.?, Steph. *Ceratopogon*, B. Meig., 10 sp. *C. spinipes*, Meig.

Differs from *Ceratopogon* in having the fore femora thick and spinose beneath. Pz. 103.14.

Prionomyia, St. *Serromyia*, Meig.?, *Ceratopogon*, C. Meig., 6 sp. *Ceratopogon femoratus*, F. Meig., Kl. pl. 2, fig. 4.

Differs from *Ceratopogon* in having the hind femora thickened.

Culicoides, Latr. *Ceratopogon*, p. Meig., 6 sp. *C. pulicaris*, Linn.

Femora simple, not spined; one large imperfect sub-marginal cell. Meig., Zw. i. pl. 2, fig. 17.

Labidomyia, St. *Forcipomyia*, Meig.?, 2 sp. *Cer. bipunctatus*, Linn., Meig.

Orphnephila, Hal. *Chenesia*, Macq., 1 sp. *O. devia*, Hal.

Eyes confluent in front; ocelli wanting; antennæ very short, naked in both sexes; base globose; anterior tarsi elongated; wings incumbent, parallel. Zool. Jour. Vol. v., pl. 15, fig. 2.

The only other distribution of the genera that I have seen is that by Haliday (Ins. Brit. Dipt. III. 1806) in which five only are included; his arrangement is as follows:—

- a. Proboscis distinct, with (4-) jointed palpi. Metathorax produced over the base of the abdomen.
- b. Mesosternum compressed, gibbous, descending as low as the ends of the posterior coxæ.
- c. Wings oblong, with anal angle more or less abrupt.

- d.* Antennæ with twelve joints or more in the ♂, seven or eight in the ♀. 1. *Chironomus*.
- dd.* Antennæ 15-jointed, plumose in the ♂, with the penultimate joint elongated. Pobrachial areolet closed externally. 2. *Tanypus*.
- cc.* Wings nearly spatulate, the anal margin being sloped without an angle. 3. *Corynoneura*.
- bb.* Metathorax short, descending. Posterior coxæ extending downwards beyond the convex mesosternum. 4. *Ceratopogon*.
- aa.* Proboscis and palpi obsolete. Wings coriaceous. 5. *Clunio*.

It would facilitate the study of the Chironomidæ if the genera were divided into properly defined sections or sub-families, and it appears to me that at least three very natural sections may be thus defined :—

Section I. CHIRONOMINA.

Third and fourth longitudinal veins never furcate. Marginal cross-vein wanting. No posterior cross-vein. Antennæ of ♀ with few joints.

Section II. TANYPINA.

Third and fourth longitudinal veins never furcate. Marginal cross-vein present. Posterior cross-vein present.

Section III. CERATOPOGONINA.

Third longitudinal vein entirely wanting or rudimentary (a fork only being often indistinctly visible). Fourth longitudinal vein furcate. Marginal cross-vein usually present, often wanting. Posterior cross-vein wanting.

Note.—Some of the genera imperfectly or totally unknown to me may require new sections, but this must be determined by others. A separate section ought probably to receive the genera *Halirytus* and *Psamathiomya*, aberrant *Chironomidæ* in which the palpi are 2-jointed, the antennæ 6-jointed, without plumes, and the wings small, rudimentary, and without veins.

LIST OF GENERA CONTAINED IN CHIRONOMIDÆ.

Chironomus, Meigen, Illiger's Magazine, II. p. 260, 1803 (Chironomina).

Tanypus, Meig., l.c. p. 261 (Tanypina).

Ceratopogon, Meig., l.c. (Ceratopogonina).

Macropeza, Meig., Syst. Besch. I. p. 87, 1818 (unknown to me).

Heteromyia, Say, N. Am. Entom. II. 1825 (Ceratopogonina).

Hydrobænus, Fries, Kon. Vet. Ac. Handl. p. 176, 1829 (Chironomina ?)

Diamesa, Meig., Syst. Besch. VII. p. 12, 1838 (Chironomina ?).

Corynoneura, Winnertz, Stett. Ent. Zeit. VII. p. 12, 1846 (Ceratopogonina ?).

Oecacta, Poey, Memorias, &c. I. p. 236, 1853 (Ceratopogonina ?).

Clunio, Haliday, Nat. Hist. Review, VI. p. 62, 1855 (Chironomina ?).

Pachyleptus, Walker, Ins. Saund. Dipt. p. 426, 1856 (Ceratopogonina).

Chasmatonotus, Loew, Berl. Entom. Zeit. VIII. 1-2, p. 50, 1864 (unknown to me).

Podonomus, Philippi, V. z.-b. G. Wien, XV. p. 601, 1865 (Tanypina)

Psychophæna, Phil., l.c. p. 628 (Ceratopogonina).

Spaniotoma, Phil., l.c. (Chironomina).

Pentaneura, Phil., l.c. p. 630 (Tanypina ?).

Tetraphora, Phil., l.c. (Chironomina ?).

Heptagyia, Phil., l.c. p. 635 (Tanypina).

Telmatogeton, Schiner, l.c. XVI. p. 931, 1866 (Chironomina).

Smittia, Holmgren, Sv. Ak. Handl. VIII. No. 5, p. 47, 1869 (Chironomina ?).

Cricotopus, Van der Wulp, Tijdschr. Ent. XVII. p. 132, 1873 (Chironomina).

Orthocladius, V.d. Wulp, l.c. (Chironomina).

Camptocladius, V.d. Wulp, l.c. p. 133 (Chironomina).

Tanytarsus, V.d. Wulp, l.c. p. 134 (Chironomina).

Eurycnemus, V.d. Wulp, l.c. p. 135 (Chironomina).

Metriocnemus, V.d. Wulp, l.c. p. 136 (Chironomina).

Haliryus, Eaton, Ent. Mon. Mag. XII. p. 60, 1875 (Ceratopogonina ?).

Limnophyes, Eaton, l.c. (Chironomina).

Didymophleps, Weyenberg, Stett. Ent. Zeit. XLIV. Nos. 1-3, p. 108, 1883 (Ceratopogonina).

Burmeisteria, Weyen., Tijdschr. Ent. XXIX. p. 130, 1886 (unknown to me).

Psamathomyia, Deby, Jour. R. Mic. Soc. II. p. 181, 1889 (Ceratopogonina ?).

Doloplastus, gen.nov. proposed in the present contribution, p. 260 (Chironomina).

Isoplastus, l.c. p. 279 (Tanypina).

Procladius, l.c. p. 283 (Tanypina).

Leptoconops, l.c. p. 288 (Ceratopogonina).

VENATION.

The venation of the wings is considerably modified in the the Chironomidæ. We have clearly three principal types of venation, which at once suggest the division of the genera into sections. The homologies of these types at first seem doubtful and obscure, and, as might be expected, the opinions of authors differ considerably about the terminology of the veins. What one author considers part of one vein, another regards as the whole, or a portion, of another; one vein is sometimes named twice, and two veins united under a single name. Occasionally the rudimentary condition or complete absence of a certain vein will lead to a

misunderstanding of those really represented, the lost vein being considered present. My theory of the venation in this family differs almost entirely from that of Winnertz (as exemplified in his monograph of the genus *Ceratopogon*), but agrees principally with those of Schiner (V.z-b. G. Wien, Bd. XIV. 1864) and Van der Wulp (Tijd. v. Entom. XIV. 1871, p. 79-98). The latter author bases his nomenclature on that of Schiner, and gives (pp. 82-83) an elaborate table of the different terminologies of Meigen (1), Macquart (2), Winnertz (2), and Schiner (2). In the nomenclature employed by me I endeavour to follow Loew and Osten-Sacken (Mon. Dipt. N. Amer.).

On comparing the wings of *Chironomus* and *Tanypus* it is at once evident that Winnertz's Wurzel- or Unterrandader (in *Ceratopogon*) is composed really of the basal portion of the first longitudinal and the whole of the second longitudinal; in the former two genera the second and third longitudinal veins take their origin, the one from the other, at or beyond the middle of the first longitudinal, and the presence of the marginal cross-vein and rudimentary third longitudinal vein found in the wing of so many species of *Ceratopogon* further testifies to the correctness of this view. Van der Wulp regards the second longitudinal (his Radiaalader) as wanting in *Ceratopogon*; this vein, however, is plainly present, and is called by him the Cubitaalader, really the correct name of the rudimentary third longitudinal overlooked by him. The second longitudinal and the marginal cross-vein are, however, sometimes so reduced in *Ceratopogon* that they, in a few instances, are known to amalgamate with, and form an incrossation of, the tip of the first longitudinal. In *Chironomus* and *Tanypus* the second longitudinal vein is often pale and sometimes entirely wanting. The posterior branches of the fourth and fifth longitudinal veins are named as distinct veins by Winnertz.

The following table gives the nomenclature of the alar venation in *Ceratopogon* as interpreted by Winnertz and V. d. Wulp, compared with that substituted in the following pages, and will assist in reading the descriptions of these authors:—

WINNERTZ. (Beit. zur Kennt. der Gat- tung <i>Ceratopogon</i> , 1852.)	VAN DER WULP. (Tijd. v. Entom. XIV., pl. 3, <i>Ceratopogon</i> , 1871).	TERMINOLOGY ADOPTED IN THE PRESENT ESSAY.
ADERN.	ADEREN.	VEINS.
Randader	Randader	Costa (<i>v. costalis</i>).
Wurzelquerader	Worteldwarsader	Transverse shoulder-vein (<i>v. trans. humeralis</i>).
Afterader (1)	Hulpader	Auxiliary (<i>v. auxiliaris</i>).
.....	Subcostaalader	First longitudinal (<i>v. long. 1ma</i>).
Wurzel- oder Unterrand- Ader, der Cubitus ... ..	.....	Portion of the first longitudinal vein before the middle cross-vein + the second longitudinal vein.
Zwischenader ... ..	.....	Portion of the first longitudinal vein beyond the origin of the second longitudinal.
Randfeldquerader ... ..	.....	Marginal cross-vein.
.....	Cubitaalader	Second longitudinal (<i>v. long. 2da</i>).
.....	.....	Third longitudinal (<i>v. long. 3a</i>).
Rucklaufende Ader	Middeldwarsader	Middle cross-vein (<i>v. trans. media</i>).
Mittelader + Scheiben- ader	Discoidaal- of shijfader	Fourth longitudinal (<i>v. long. 4a</i>).
Achselader + Hinterader	Posticaalader	Fifth longitudinal (<i>v. long. 5a</i>).
Afterader (2) ... ..	.....	Sixth longitudinal (<i>v. long. 6a</i>).
Afterader (3) ... ..	.....	Seventh longitudinal (<i>v. long. 7a</i>).
ZELLEN.	CELLEN.	CELLS.
Vordern Randzelle	Rand- of Costaalcel	Subcostal (<i>c. subcostalis</i>).
Vordern Thiel der hin- tern Randzelle	Cubitaalcel	Inner marginal (<i>c. marginalis interior</i>)
Hintern Theil der hin- tern Randzelle	Subcostalcel	Marginal (<i>c. marginalis</i>).
Vordern Cubitalzelle	Bovenste wortelcel	1st Basal (<i>c. basalis 1ma</i>).
Hintern Cubitalzelle	Eerste achtercel	1st Posterior (<i>c. posterior 1ma</i>).
Obern Scheibenzelle	Tweede achtercel	2nd Posterior (<i>c. posterior 2da</i>).
Untern Scheibenzelle	Derde achtercel	3rd Posterior (<i>c. posterior 3a</i>).
Hintern Achselzelle	Vierde achtercel	Anal (<i>c. analis</i>).
Vordern Achselzelle ... ..	.....	Spurious.

Section I. CHIRONOMINA.

Head small, transverse, situated deep in thorax. Eyes more or less reniform, separate in both sexes (approximate beneath in *Clunio*). Ocelli wanting. Palpi porrected, pubescent, sub-cylindrical, curved, four-jointed; first joint very small, second and third moderately long, of equal length, fourth as long or longer (wanting in *Clunio*). Proboscis short (obsolete in *Clunio*). Antennæ porrect, normally 2- + 12-jointed in ♂, 2- + 5-jointed in ♀, rarely with an equal number of joints in both sexes; first joint of the scapus large, globose or disciform, the second small; in ♂ usually as long as thorax, densely plumose, the verticils diminishing in length towards the extremity; first eleven flagellar joints extremely short, terminal joint filiform, very long; in ♀ usually about half the length of thorax, flagellar joints ovate, oblong, or elongate-pyriform, increasing in length from first, sparingly verticillate-pilose, terminal joint slender, pilose. Thorax ovate or elongate-ovate, gibbose, more or less projecting in front, usually with three dark stripes; scutellum small, semicircular; metathorax prominent. Halteres short. Abdomen eight-segmented; long and slender in ♂, anal joint distinct, forceps prominent, generally falcate or filiform; in ♀ shorter and more robust. Legs more or less long and slender, anterior pair remote from the others; coxæ short; tibiæ more or less confluent-calcarate at apex; as long, longer or shorter than metatarsus; unguis small. Wings narrow, elongate, lanceolate, more or less rectangular at base, naked or pubescent, ciliated; deflexed in repose. Humeral cross-vein present. Sub-costal cross-vein always (?) absent. Marginal cross-vein wanting. Posterior transverse-vein wanting. Auxiliary vein usually pale and indistinct, often scarcely reaching costa about middle of anterior border or beyond it. Costal usually terminating at tip of third longitudinal vein, sometimes extending a little

beyond it. First longitudinal vein reaching costa beyond middle. Second and third longitudinal veins originating together from first longitudinal vein at apex of middle cross-vein, which may be situated before, at or beyond middle of wing; second longitudinal vein usually very pale and indistinct, or wanting (?). Third longitudinal never furcate, bent upwards or downwards towards tip. Fourth longitudinal never furcate, originating at base of fifth longitudinal, usually slightly angulated at middle cross-vein, gently arcuated anteriorly, straight, or somewhat sinuose beyond it, not quite reaching wing-margin, or indistinctly reaching it, at or below the apex.* Fifth longitudinal vein forked before, at or beyond middle of wing, fork acuminate at base; anterior branch straight or slightly arcuated posteriorly, longer than posterior, latter straight, slightly arcuated or sinuose.

Genus 1. CHIRONOMUS, Meig.

Chironomus, Meigen, Illiger's Mag. II. p. 260, 1803; Latreille, Gen. Cr. et Ins. IV. p. 248; Macquart, S. à B. I. p. 47, 1834; Zetterstedt, D. Sc. IX. 1850; Walker, I.B. p. 149, 1856; Schiner, F.A. Dipt. 1864; V. d. Wulp, Tijds. Entom. XVII. p. 129, 1873-74.

Antennæ 2-+12-jointed in ♂, 2-+5-jointed in ♀. Thorax usually with three stripes. Wings naked. Costal vein not extending beyond tip of third longitudinal vein. In fore legs metatarsus longer than tibia, or (by exception) at least as long as it. Anal joint of ♂ abdomen longer than broad; forceps generally filiform or falcate.

* In most cases it is impossible, without the aid of the microscope, to discover that the fourth longitudinal vein does not really reach the wing-margin; the ordinary entomological lens will rarely reveal the fact.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE							
		Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
219	<i>Ch. occidentalis</i> ..	...	...	...	...	...	...	...	...	79	7	13	1
220	<i>Ch. Nepeanensis</i> ...	64	36	...	...	81	4	13	2	...	...	...	...
221	<i>Ch. egregius</i>	63	37	...	...	77	6	16	1	...	...	...	...
222	<i>Ch. pervagatus</i> ...	...	..	64	36	...	...	...	...	77	6	15	1
223	<i>Ch. intertinctus</i> ...	64	36	65	35	80	4	14	2	76	5	18	1
224	<i>Ch. subdolus</i> ...	64	36	...	...	79	5	15	1	...	...	...	...
225	<i>Ch. Hexhamensis</i>	64	36	...	...	78	6	14	2	...	...	...	...
226	<i>Ch. blandus</i>... ..	...	...	65	35	...	...	...	...	75	5	19	1
227	<i>Ch. januarius</i> ...	65	35	...	...	78	4	16	2	...	...	...	...
228	<i>Ch. delinificus</i> ...	63	37	...	...	74	5	19	2	...	...	...	...
229	<i>Ch. pulcher</i> ... ..	...	...	60	40	...	...	...	...	65	8	22	5
230	<i>Ch. seorsus</i> ... ..	...	...	65	85	...	...	...	...	74	3	23	0
231	<i>Ch. orarius</i>	65	35	?	?	73	3	23	1	78	4	17	1
232	<i>Ch. erebeus</i> ... ..	...	...	63	37	...	...	...	...	73	10	12	5
233	<i>Ch. Tepperi</i> ... ..	...	...	65	35	...	...	...	...	73	5	20	2
234	<i>Ch. fluviaticus</i> ...	65	35	...	...	74	9	15	2	...	...	...	...
235	<i>Ch. subvittatus</i> ...	67	33	...	...	73	6	17	4	...	...	...	...
236	<i>Ch. oresitrophus</i> ...	64	36	67	33	73	2	25	0	72	3	25	0
237	<i>Ch. vespertinus</i> ...	63	37	...	...	71	7	21	1	...	...	...	...
238	<i>Ch. brevis</i> ... ..	...	...	63	37	...	...	...	...	69	3	28	0
239	<i>Ch. nubifer</i>	66	34	65	35	78	4	16	2	76	4	17	3

A. Thorax pale with three distinct stripes.

219. *CHIRONOMUS OCCIDENTALIS*, sp.n. (Pl. XI., fig. 1.).

♀.—Length of antennæ.....	0·042 inch	...	1·06 millimètres.
Expanse of wings.....	0·240 × 0·065	...	6·09 × 1·66
Size of body.....	0·310 × 0·047	...	7·87 × 1·18

Antennæ wholly ochre-yellow. Head ochreous-brown, with golden-yellow hairs. Clypeus and palpi ochreous-brown, densely covered with golden-yellow pubescence, that on the former longer. Thorax pale pinkish-ochreous with three longitudinal stripes of light fuscous, the lateral ones starting somewhat above middle of thorax, running almost to a point posteriorly and reaching hinder margin, intermediate one beginning at collare, terminating somewhat beyond the middle, with a light brown median line supporting a double row of short golden-yellow hairs; a row of longer hairs between the stripes; pleuræ pale pinkish-ochreous; scutellum yellowish, light fuscous along base, fringed with long golden-yellow hairs; metanotum pinkish-ochreous. Halteres pale yellow. Abdomen thrice length of thorax, umbrous-brown, each segment bordered posteriorly with very pale ochreous or whitish, the bands narrower on each succeeding segment, lamellæ of ovipositor ochre-yellow. Legs yellow; tarsi brownish-yellow, each joint slightly tipped with light fuscous (tarsal joints of fore legs and those with tibiæ of hind legs lost). In intermediate legs tibiæ exactly the length of femora and twice the length of metatarsus; metatarsus not quite twice the length of second tarsal joint, this joint $\frac{1}{3}$ longer than fourth and twice the length of fifth. Wings hyaline, glabrous, costal and first two longitudinal veins brownish-yellow, marginal cross-vein and portion of the second longitudinal vein between that and origin of third longitudinal vein suffused with brown. Costal and third longitudinal meeting nearly at apex of wing; auxiliary vein joining costa opposite middle of posterior branch of fifth longitudinal vein; second longitudinal

vein somewhat indistinct, reaching costa nearly opposite tip of anterior branch of fifth longitudinal fork; fourth longitudinal almost reaching the wing-margin, its tip situated at a point $\frac{1}{3}$ the distance from tip of costa to that of anterior branch of fifth longitudinal fork; posterior branch of latter $\frac{3}{5}$ length of anterior.

Hab.—King George's Sound, West Australia (Masters). One specimen.

220. *CHIRONOMUS NEPEANENSIS*, sp.n.

♂.—Length of antennæ 0.075 inch ... 1.89 millimètres.

Expanse of wings..... 0.180 × 0.037 ... 4.56 × 0.92

Size of body 0.300 × 0.037 ... 7.62 × 0.92

Antennæ dark brown, with light bronzy-brown plumes; first joint of scapus dark brown, somewhat pruinose. Head, clypeus, and palpi brown, with brown hairs. Thorax pale greenish-yellow with three bands; anterior band fulvous, bordered laterally, except for its anterior third, with a dark brown line, base united to scutellum by a fine brown line, lateral bands fulvous posteriorly, dark brown anteriorly, united at apex to anterior extremity of dark brown border of middle band by dark brown line; bands and lines with a hoary appearance when viewed in a certain light; a median longitudinal row of short pale yellow hairs in the anterior band, and another of longer hairs along inside margin of lateral bands; pleuræ and scutellum pale greenish-yellow, the latter fringed with yellow hairs; pectus brownish, hoary; metanotum deep brown, almost black, dark fulvous at each side. Halteres pale yellow. Abdomen about three times length of thorax, greenish-yellow, tinged with brownish, second to fourth segments bordered anteriorly with a moderately broad ring of deep brown, with the last two segments entirely deep brown; all segments with a light reflection on posterior margin; densely clothed with long pale yellow hairs; anal joint and forceps dark brown, densely haired. Legs yellowish or pale ochreous, the femora, tibiæ, and all tarsal joints slightly tipped with brown,

tibiæ of the fore legs also brown at base. In fore legs metatarsus $\frac{1}{3}$ longer than tibia. Wings considerably shorter than abdomen, hyaline, veins very pale, ochreous-yellow, marginal cross-vein and portions of the neighbouring veins suffused with deep brown or black; veins pale. Costal and third longitudinal meeting a little before apex of wing; auxiliary vein reaching costa opposite tip of posterior branch of fifth longitudinal fork; second longitudinal distinct for the whole of its length, reaching costa a little past tip of first longitudinal; fourth longitudinal very pale past the middle cross-vein, almost reaching the wing-margin, its tip about midway between tip of costa and that of anterior branch of fifth longitudinal fork; base of the latter situated opposite base of middle cross-vein, its posterior branch rather more than half the length of anterior.

Hab.—Nepean River, near Penrith, N.S.W. (Skuse). September.

Obs.—I have taken but one specimen of this conspicuous insect.

221. CHIRONOMUS EGREGIUS, sp.n.

♂.—Length of antennæ.....	0.070 inch	...	1.77 millimètres.
Expanse of wings.....	0.160 × 0.040	...	4.06 × 1.01
Size of body.....	0.270 × 0.037	...	6.85 × 0.92

Antennæ light ochreous-brown; first joint of scapus light ferruginous. Head, clypeus, and palpi ochreous-brown. Thorax pale greenish-yellow, with three broad fulvous bands, middle one united to the scutellum by a fine line; pleuræ pale greenish or greenish-yellow, sometimes, with pectus, pale fulvous; scutellum pale greenish-yellow, fringed with yellow hairs; metanotum light umbrous-brown, yellow anteriorly, with a very fine median yellow line. Halteres pale yellow. Abdomen nearly three times length of thorax, prasinous, the last three segments pale brown, each segment marked longitudinally with deep brown, the markings on second, third, and fourth segments olive brown, more or less

diamond-shaped, densely clothed with rather long pale yellow hairs; anal joint and forceps dark brown, more or less tinged with ochreous. Legs very pale ochreous-yellow, last two tarsal joints and extreme tips of preceding ones more or less dusky, densely clothed with pale yellow hairs; tibial spurs deep brown. In fore-legs metatarsus nearly twice the length of tibiæ. Wings shorter than abdomen, hyaline, iridescent, costal, first and third longitudinal veins and basal portion of fourth longitudinal vein ochre-yellow, distinct. Costal and third longitudinal veins meeting a little before the apex of the wing; auxiliary vein indistinct, scarcely reaching costa, its tip about opposite that of posterior branch of fifth longitudinal fork; second longitudinal indistinct towards its tip, scarcely reaching costa, terminating a short distance beyond tip of first longitudinal vein; fourth longitudinal vein pale beyond middle cross-vein, not quite reaching wing-margin, its tip situated about $\frac{1}{3}$ the distance from tip of costa to that of anterior branch of fifth longitudinal fork; base of latter lying opposite base of middle cross-vein, its posterior branch rather more than half the length of anterior.

Hab.—Sydney (Masters and Skuse); Hexham near Newcastle, N.S.W. (Skuse); Victoria Park, Brisbane, in November (Mr. H. Tryon). April.

222. CHIRONOMUS PERVAGATUS, sp.n.

♀.—Length of antennæ.....	0·037 inch	...	0·92 millimètre.
Expansé of wings.....	0·185 × 0·057	...	4·68 × 1·44
Size of body.....	0·250 × 0·040	...	6·34 × 1·01

Antennæ brown, dusky towards the extremity, the basal joint and first two flagellar joints sometimes ochreous-yellow. Head ochre-yellow or brownish-yellow. Face, clypeus, and palpi brown or yellowish-brown. Thorax ochre-yellow, pale yellowish-brown, with three brown stripes, the anterior one with a lighter (sometimes darker) median line which continues to the scutellum; three longitudinal rows of pale yellow hairs; pleuræ ochreous,

ochreous-brown or brown, sometimes with a small perpendicular oblong brown spot under the origin of the wings; pectus light reddish-brown to deep brown; scutellum yellow or sordid yellow, fringed with pale yellow hairs; metanotum usually dark brown, sometimes lighter. Halteres yellow. Abdomen about three times length of thorax, clothed with pale yellow hairs, more or less dark brown, posterior borders of segments sometimes slightly fulvous. Legs yellow or pale ochre-yellow; tarsi more or less brownish or dusky. Tibial spurs deep brown or black. In fore legs metatarsus twice length of tibia. Wings shorter than abdomen, hyaline, weakly iridescent; costal, first and third longitudinal veins, middle cross-vein, and basal half of fourth longitudinal distinct, ochreous-brown. Costal and third longitudinal veins meeting somewhat before apex of wing; auxiliary very pale and indistinct, reaching the costa opposite or somewhat beyond middle of posterior branch of fifth longitudinal fork; second longitudinal vein very pale, especially towards tip, terminating at a point about $\frac{1}{3}$ distance from tip of first longitudinal to that of third longitudinal; fourth longitudinal very pale beyond cross-vein, almost reaching wing-margin, its tip situated at a point not $\frac{1}{3}$ the distance from tip of third longitudinal vein to that of anterior branch of fifth longitudinal fork; base of latter lying a little beyond middle cross-vein, its posterior branch nearly $\frac{2}{3}$ the length of anterior.

Hab.—Lawson, Berowra, and Sydney, N.S.W. (Masters and Skuse).

223. CHIRONOMUS INTERTINCTUS, sp.n.

♂.—Length of antennæ.....	0·075 inch	...	1·89 millimètres.
Expanse of wings.....	0·150 × 0·032	...	3·81 × 0·80
Size of body.....	0·240 × 0·037	...	6·09 × 0·92
♀.—Length of antennæ.....	0·032 inch	...	0·80 millimètres.
Expanse of wings.....	0·150 × 0·037	...	3·81 × 0·92
Size of body.....	0·200 × 0·037	...	5·08 × 0·92

♂ and ♀.—Antennæ light brown in ♂, fuscous in ♀; joints of the scapus varying from ochreous-yellow to light fuscous brown. Head, clypeus, and palpi light fuscous-brown, clypeus sometimes yellowish; head with yellow, and clypeus and palpi with brownish hairs. Thorax pale greenish-yellow (slightly tinged with brown in some specimens) with three longitudinal stripes, fulvous in ♂, very prominent and deep castaneous-brown in ♀; intermediate stripe with a sparse median line of short yellow hairs, also a row between the stripes extending the whole length of the thorax; pectus more or less tinged with brown; pleuræ pale greenish-yellow, more or less distinctly tinged with pale fulvous; scutellum pale greenish or greenish-yellow, sometimes with a fulvous tint, fringed with yellow hairs; metanotum in ♂ pale fulvous-yellow, in ♀ the anterior half pale greenish, greenish or fulvous-yellow, posterior half deep castaneous-brown with a pale median line. Halteres pale yellowish-green in ♂, almost æruginous in ♀. Abdomen about three times the length of the thorax in ♂, shorter in ♀, prasinous, clothed with pale yellow hairs, the last two abdominal segments of ♂ tinged with brown, and anal joint and holding forceps entirely brown; lamellæ of ♀ ovipositor light brown. Coxæ and femora pale greenish-yellow; in fore legs apex of the femora and entire tibiæ and tarsi deep fuscous-brown, in intermediate and hind legs extreme tip of femora generally very slightly brownish. Tibiæ in intermediate and hind legs pale brownish-yellow, deep fuscous at extreme base and extreme apex. Tarsi fuscous-brown, basal three-fourths or more of metatarsi brownish-yellow. In fore legs tibiæ a little more than half the length of metatarsus. Wings shorter than the abdomen in ♂, as long or longer than it in ♀; hyaline, iridescent, the costal, first three longitudinal veins, and basal half of fourth longitudinal brownish-ochreous. Costal and third longitudinal veins meeting a short distance from apex of wing; auxiliary vein joining costa not quite mid-way between middle cross-vein and tip of the first longitudinal; first longitudinal joining costa before tip of anterior branch of fifth longitudinal fork; fourth longitudinal vein almost reaching wing-margin, its tip situated nearer tip of costa than to

that of anterior branch of fifth longitudinal fork; base of the latter situated somewhat beyond middle cross-vein; its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Wheeny Creek, Hawkesbury District, and Hexham Swamps, near Newcastle, N.S.W. (Skuse); Brisbane, Queensland (taken at light by Mr. H. Tryon). November to April.

224. *CHIRONOMUS SUBDOLUS*, sp.n.

♂.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·130 × 0·030	...	3·30 × 0·76
Size of body.....	0·200 × 0·027	...	5·08 × 0·68

Antennæ brown, with somewhat bronzy-brown plumes; first joint of scapus umber-brown. Head pale greenish-yellow with pale yellow hairs. Clypeus and palpi light greenish-brown. Thorax, pleuræ, and scutellum pale greenish or greenish-yellow, the former with three ochraceous-ferruginous bands; pale yellow hairs; pectus brownish; metanotum deep brown, pale greenish-yellow anteriorly, and with a very fine pale median line. Halteres very pale green. Abdomen nearly three times length of thorax, prasinous, second to fifth segments with a diamond-shaped olive-brown spot superiorly, last two segments entirely blackish-brown; rather moderately clothed with short pale yellow hairs; anal joint and forceps dusky brown, with short hairs. Coxæ and femora pale greenish-yellow. Tibiæ and tarsi of a more ochreous-yellow, joints of tarsi almost imperceptibly tipped with brown. Tibial spurs deep brown or black. In fore legs metatarsus twice length of tibia. Wings shorter than abdomen, hyaline: costal, first three longitudinal veins and basal half of fourth longitudinal vein brownish-ochreous. Costal and third longitudinal veins meeting a little before apex of wing; auxiliary vein indistinctly reaching costa opposite middle of posterior branch of fifth longitudinal fork; second longitudinal joining costa a short distance beyond tip of first longitudinal; fourth longitudinal pale beyond

middle cross-vein, not reaching wing-margin, its tip situated at a point $\frac{1}{3}$ the distance from tip of costa to that of anterior branch of fifth longitudinal fork; latter very pale, its base lying opposite middle cross-vein, posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Clifton, Illawarra district, N.S.W. (Skuse). December.

225. *CHIRONOMUS HEXHAMENSIS*, sp.n.

♂.—Length of antennæ.....	0.055 inch	...	1.39 millimètres.
Expanse of wings.....	0.120 × 0.030	...	3.04 × 0.76
Size of body.....	0.200 × 0.023	...	5.08 × 0.58

Antennæ light ochreous-brown; first joint of scapus fulvous. Head, clypeus, and palpi ochreous-brown. Thorax, pleuræ, scutellum, and abdomen prasinous; three bands of thorax, pectus, and metanotum fulvous. Halteres pale yellow. Abdomen three times the length of thorax, rather densely clothed with yellow hairs; anal joint and forceps light ochreous-brown, densely haired. Coxæ and femora prasinous. Tibiæ greenish-yellow, apical spurs black or deep brown. Tarsi dusky, except metatarsi of intermediate and hind legs, which are more or less yellowish or fulvous. In fore legs tibiæ not quite $\frac{2}{3}$ the length of metatarsus. Wings shorter than abdomen, hyaline, with a weak reflection, all the veins tolerably distinct, brownish. Costal and third longitudinal veins meeting somewhat before apex of wings; auxiliary vein reaching costa opposite tip of posterior branch of fifth longitudinal fork; second longitudinal vein running close to first longitudinal, pale, terminating in the costa a short distance past tip of latter; fourth longitudinal pale past middle cross-vein, indistinctly reaching the margin, its tip somewhat nearer to tip of costa than to that of anterior branch of fifth longitudinal fork; base of the latter almost opposite, but somewhat beyond, middle cross-vein, its posterior branch about half the length of the anterior.

Hab.—Hexham, near Newcastle, N.S.W. (Skuse); Adelaide, S. Australia (*Coll. Adelaide Museum*, Mr. T. P. O. Tepper). December to April.

226. *CHIRONOMUS BLANDUS*, sp.n.

♀.—Length of antennæ.....	0.025 inch	...	0.62 millimètre.
Expanse of wings.....	0.135 × 0.037	...	3.42 × 0.92
Size of body.....	0.150 × 0.027	...	3.81 × 0.68

Antennæ light brown, tinged with ochreous. Head, clypeus, and palpi light brown; pale pubescence. Thorax pale greenish-yellow, with three pale fulvous stripes more or less tinged with greenish; longitudinal row of pale hairs between the bands from anterior extremity of lateral ones to scutellum; pleuræ, pectus, scutellum and metanotum pale greenish-yellow; scutellum fringed with long pale yellow hairs. Halteres pale greenish-yellow. Abdomen twice the length of thorax, pale prasinous, the last two segments brownish, (the last five segments brownish beneath, but this may be merely discoloration) clothed with tolerably long pale yellow hairs. Legs pale greenish-yellow, fore tibiæ and tarsi, and last four tarsal joints in intermediate and fore legs more or less brownish. Tibial spurs deep brown. In fore legs metatarsus about twice the length of tibia. Wings longer than abdomen, pellucid, somewhat opaline, costal, first and third longitudinal, middle cross-vein, and basal half of the fourth longitudinal veins distinct, greenish-yellow. Costal and third longitudinal veins meeting a little before apex of wing; auxiliary vein indistinctly reaching costa about opposite middle of posterior branch of fifth longitudinal fork; second longitudinal pale, running close to first longitudinal and for a little distance along costa; fourth longitudinal vein pale beyond middle cross-vein, not quite reaching wing-margin, its tip situated at a point about half way between tips of costal and anterior branch of fifth longitudinal fork; base of the latter lying somewhat beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab. Narrabeen Lagoon, near Manly, N. S. Wales (Skuse).
January.

227. *CHIRONOMUS JANUARIUS*, sp.n.

♂.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings.....	0·110 × 0·027	...	2·79 × 0·68
Size of body.....	0·140 × 0·020	...	3·55 × 0·50

Antennæ pale brown; first joint of scapus reddish-brown. Head brown. Clypeus and palpi light reddish-brown. Thorax greenish-yellow or pale ochreous, with three somewhat indistinct light brown bands, the anterior one united to the scutellum by a light brown line; a longitudinal row of yellow hairs between the bands and on anterior portion of the intermediate one; pleuræ and pectus pale ochreous-brown; scutellum sordid ochreous-yellow, fringed with long yellow hairs; metanotum purplish-brown. Halteres pale green. Abdomen rather more than thrice the length of thorax, umbrous-brown, sub-levigate, rather densely clothed with moderately long yellow hairs. Legs yellow, the tibia terminating in deep brown or black spines, the tarsi except metatarsal joint of fore legs light brown, dark brown at the extreme apices of the joints. In fore legs metatarsus twice the length of tibia. Wings rather shorter than abdomen, hyaline; costal, first and third longitudinal, and basal half of the fourth longitudinal vein, brownish-yellow. Costal and third longitudinal vein meeting a short distance before apex of wing; auxiliary vein joining costa before middle of posterior branch of fifth longitudinal fork; second longitudinal vein joining costa a little beyond tip of first longitudinal vein; fourth longitudinal vein pale almost reaching the wing-margin, its tip situated nearer to tip of costa than to that of anterior branch of fifth longitudinal fork; base of latter lying opposite middle cross-vein, its posterior branch a little more than half the length of anterior.

Hab.—Wheeney Creek, N.S.W. (Skuse). January.

228. *CHIRONOMUS DELINIFICUS*, sp.n. (Pl. XI, fig. 2).

♂.—Length of antennæ.....	0·037 inch	...	0·92 millimètre.
Expanse of wings.....	0·085 × 0·020	...	2·14 × 0·50
Size of body.....	0·120 × 0·017	...	3·04 × 0·42

Antennæ light ochreous-yellow; joints of scapus reddish-brown. Head, face, clypeus and palpi brown, with a yellow pubescence. Thorax ochre-yellow, with no anterior stripe, two lateral stripes of brown posteriorly, and an intermediate narrow stripe of same colour not reaching scutellum; pleuræ ochre-yellow; pectus tinged with brown; scutellum pale yellow; metanotum ochreous-brown with a darker median line. Halteres pale yellow. Abdomen nearly three times the length of thorax, pale yellowish-green, with a rather dense covering of pale yellow hairs; anal joint and forceps narrow, yellowish-green. Legs light ochre-yellow (tarsal joints of the fore legs lost); tibial spurs black. Wings nearly the length of abdomen, pellucid, almost hyaline; costal, first and third longitudinal, middle cross-vein, and basal half of fourth longitudinal veins yellow, distinct. Costal and third longitudinal veins meeting a short distance before apex of wing; auxiliary vein pale, indistinct towards tip, apparently terminating in costa at a point about $\frac{2}{3}$ the distance from middle cross-vein to tip of first longitudinal vein; second longitudinal vein very pale, running close to third longitudinal for greater part of its length, joining costa a short distance beyond tip of first longitudinal; fourth longitudinal pale beyond the middle cross-vein, very nearly reaching wing-margin, its tip situated at a point nearer to tip of costal than to that of anterior branch of fifth longitudinal fork; base of latter considerably beyond middle cross-vein, its posterior branch half the length of anterior.

Hab.—Knapsack Gully, Blue Mountains (Masters). One specimen in September.

229. *CHIRONOMUS PULCHER*, sp.n. (Pl. XI., fig. 3).

♀.—Length of antennæ.....	0·014 inch	...	0·35 millimètre.
Expanse of wings.....	0·075 × 0·027	...	1·89 × 0·68
Size of body.....	0·075 × 0·016	...	1·89 × 0·40

Antennæ brownish-green, basal joint more yellowish. Head green, the face, clypeus, and palpi brownish-green. Thorax

prasinous, with three olivaceous stripes more or less tinged with tawny; pleuræ, pectus and scutellum prasinous, the latter fringed with short yellow hairs; metanotum prasinous anteriorly, livid posteriorly. Halteres prasinous. Abdomen short, robust, æruginous, all segments with a narrow paler border posteriorly, clothed with a sparse pale yellow pubescence; terminal lamellæ yellow. Coxæ and femora prasinous. Tibiæ and tarsi of fore legs sooty brown. Tibiæ and metatarsi of intermediate and hind legs somewhat fulvous, their tips and all remaining tarsal joints sooty brown. In fore legs metatarsus $\frac{1}{3}$ longer than tibia. Wings the length of whole body, beautifully opaline; costal, first and third longitudinal, middle cross-vein, and basal half of fourth longitudinal veins distinct, yellow. Costal and third longitudinal veins meeting considerably before apex of wing; auxiliary vein indistinctly joining costa about mid-way between middle cross-vein and tip of first longitudinal vein; second longitudinal vein scarcely distinguishable, reaching costa at a point $\frac{1}{3}$ the distance from tip of first longitudinal to tip of costal vein; fourth longitudinal pale, almost reaching wing-margin, its tip situated about mid-way between tip of costal and that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond middle cross-vein, its posterior branch somewhat more than half the length of anterior.

Hab.—Summer Hill, near Sydney (Mr. Cyril Haviland). April.

B. Thorax pale without distinct stripes.

230. CHIRONOMUS SEORSUS, sp.n. (Pl. XI., fig. 4).

♀.—Length of antennæ.....	0·025 inch	...	0·62 millimètre.
Expanse of wings.....	0·085 × 0·025	...	2·14 × 0·62
Size of body.....	0·070 × 0·016	...	1·77 × 0·40

Antennæ ochreous-brown, with long brownish verticils; basal joint deep brown. Head ochreous-brown; face and clypeus deep brown. Palpi yellow. Thorax yellow, levigate, with three

longitudinal rows of yellow hairs ; pleuræ, pectus, scutellum, and metanotum yellow, the latter tinged with brownish. Halteres pale yellow. Abdomen short, yellowish-green, densely clothed with short pale yellow hairs. Legs yellow, densely haired. Tibial spurs black. In fore legs metatarsus almost twice length of tibia. Wings longer than body, pellucid, almost hyaline, with rosy and aurichalceous reflections ; costal, first and third longitudinal, and basal portion of fourth and whole of fifth longitudinal vein distinct, brownish-yellow. Costal and third longitudinal veins meeting at apex of wing ; auxiliary vein very indistinct, joining costa a short distance beyond middle cross-vein ; second longitudinal vein scarcely determinable, running close to first longitudinal ; fourth longitudinal very pale and indistinct, disappearing entirely a short distance before wing-margin, its tip nearer to tip of costal than to that of anterior branch of fifth longitudinal fork ; posterior branch of latter less than $\frac{2}{5}$ the length of anterior branch.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

231. CHIRONOMUS ORARIUS, sp.n.

♂.—Length of antennæ.....	0·037 inch	...	0·92 millimètre.
Expanse of wings.....	0·075 × 0·020	...	1·89 × 0·50
Size of body.....	0·090 × 0·016	...	2·27 × 0·40
♀.—Length of antennæ.....	0·025 inch	...	0·62 millimètre.
Expanse of wings.....	0·105 × 0·025	...	2·67 × 0·62
Size of body.....	0·105 × 0·016	...	2·67 × 0·40

♂ and ♀.—Entirely yellow, except that flagellar joints in ♂ antennæ ochreous-brown or light brown. Antennæ in ♀ with long pale yellow verticils. Thorax with three longitudinal rows of long yellow hairs. Abdomen with slightly greenish tint in ♀ ; in both sexes about three times the length of thorax ; densely clothed with pale yellow hairs ; anal joint and holding-forceps of

♂ narrower than terminal segment. Tibial spurs black. In fore legs the metatarsus twice the length of tibia. Wings in ♂ shorter, in ♀ longer, than the body; pellucid in ♂, hyaline in ♀, with weak reflections; veins yellow. Costal and third longitudinal veins meeting slightly before apex of wing; auxiliary vein very indistinct, especially in ♂, joining costa a little beyond middle cross-vein; second longitudinal vein most indistinct in ♂, clearly visible in ♀, very near first longitudinal; fourth longitudinal very pale beyond middle cross-vein, almost reaching wing-margin, its tip nearer to tip of costal than to that of anterior branch of fifth longitudinal fork; posterior branch of latter about half the length of anterior branch.

Hab.—Middle Harbour, near Sydney (Skuse); Berowra, N.S.W. (Masters). Abundant in September.

Obs.—Very closely allied to the last, but I think distinct.

C. Thorax brown or black without distinct stripes.

a. Wings unspotted.

232. CHIRONOMUS EREBEUS, sp.n. (Pl. XI., fig. 5).

♀.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings	0·160 × 0·040	...	4·06 × 1·01
Size of body.....	0·210 × 0·033	...	5·33 × 0·84

Antennæ brown, with brown verticils; first joint of scapus black. Head black, glabrous. Palpi brown, and with clypeus densely covered with brown hairs, those on latter longer. Thorax black, sub-nitidous, glabrous; pleuræ and scutellum brownish-black, latter fringed with black hairs; metanotum black. Halteres yellow, sometimes slightly brownish at base. Abdomen more than twice the length of thorax, black, sub-nitidous, sparingly clothed with short black hairs; lamelli of ovipositor black. Coxæ deep brown, slightly ochreous at apex; trochanters ochreous. Femora and tibiæ black. Tarsi almost ochreous-brown, slightly infuscated. In fore legs tibia twice the length of metatarsus. Wings hyaline, smoky along anterior border, iridescent; costal,

first and second longitudinal veins, middle cross-vein and basal half of fourth longitudinal vein brown. Costal and third longitudinal veins meeting at a point much before apex of wing; auxiliary vein joining costa nearly opposite tip of posterior branch of fifth longitudinal fork; second longitudinal vein reaching margin midway between tips of first and third longitudinal veins; fourth longitudinal vein nearly reaching wing-margin, its tip situated at a point considerably nearer to tip of anterior branch of fifth longitudinal fork than to that of costal vein; base of fifth longitudinal fork lying somewhat beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Woronora, N.S.W. (Skuse). Two specimens. September.

233. *CHIRONOMUS TEPPERI*, sp.n. (Pl. XI., fig. 6).

♀.—Length of antennæ.....	0·027 inch	...	0·68 millimètre.
Expanse of wings.....	0·165 × 0·045	...	4·18 × 1·13
Size of body.....	0·200 × 0·035	...	5·08 × 0·88

Antennæ black; first joint of scapus somewhat ochreous, more or less hoary. Head, clypeus, and palpi brown, with yellow hairs. Thorax black, opaque, hoary, with three longitudinal rows of yellow hairs; pleuræ, pectus, scutellum and metanotum black, hoary; scutellum fringed with long yellow hairs. Halteres pale yellow. Abdomen more than twice the length of thorax, dusky brown or black, levigate, a little hoary, tolerably clothed with pale yellow hairs; lamellæ of ♀ ovipositor ochreous. Legs with a yellow pubescence. Tibial spurs black. Femora and tibiæ brownish-ochreous, the apex of former and base and apex of latter dusky brown. Metatarsi brownish-ochreous, their tips and remaining tarsal joints dusky brown. In fore legs metatarsus not $\frac{1}{2}$ longer than tibia. Wings about the length of abdomen, hyaline, a little iridescent, with ochre-yellow veins. Costal and third longitudinal veins meeting a little before apex of wing; auxiliary vein extremely indistinct, apparently terminating near costa a short distance past middle cross-vein; second longitudinal vein very pale and indistinct, joining costa at a point $\frac{1}{3}$

the distance from tip of first longitudinal vein to tip of third longitudinal; fourth longitudinal very pale and indistinct beyond cross-vein, disappearing some distance from wing-margin, its tip situated at a point much nearer to tip of third longitudinal vein than to that of anterior branch of fifth longitudinal fork; base of latter lying a little beyond middle cross-vein, its posterior branch $\frac{2}{3}$ the length of anterior.

Hab.—Mount Lofty and Adelaide, South Australia (Mr. T. P. O. Tepper). June and October. Two specimens in the collection of the Adelaide Museum.

234. CHIRONOMUS FLUVIATICUS, sp.n.

♂.—Length of antennæ	0.050 inch	...	1.27 millimètres.
Expanse of wings.....	0.105 × 0.023	...	2.67 × 0.58
Size of body.....	0.160 × 0.020	...	4.06 × 0.50

Antennæ light and somewhat bronzy, brown; first joint of scapus deep brown or black, second and few following flagellar joints ochreous-yellow. Head deep brown or black, with some short brownish hairs. Clypeus and palpi deep brown or black, with a brown pubescence. Thorax deep brownish-black, dull, traversed (when viewed at a certain obliquity) by two longitudinal more or less hoary narrow stripes, extending from humeri to scutellum, sparingly beset with yellow hairs; also an intermediate double row of short hairs reaching to middle of thorax; pleuræ, pectus, scutellum and metanotum black, the scutellum fringed with yellow hairs. Halteres yellow. Abdomen very slender, rather more than three times the length of thorax, deep dull black, rather densely clothed with moderately long yellow hairs; anal joint black, forceps brown. Coxæ black. Remaining joints sordid ochreous-yellow, tips of femora and tibial spurs dark brown. In fore legs metatarsus $\frac{2}{7}$ longer than tibia. Wings shorter than abdomen, pellucid, with a very pale bluish tint; veins very pale brownish-yellow; dull pale brassy reflections. Costal and third longitudinal veins meeting a short distance before apex of wing;

auxiliary vein scarcely visible towards its tip, apparently terminating about opposite middle of posterior branch of fifth longitudinal fork; second longitudinal vein tolerably distinct, pale, joining costa at a point somewhat more than $\frac{1}{3}$ the distance from tip of first longitudinal to tip of third longitudinal; fourth longitudinal pale, almost reaching margin, its tip situated somewhat nearer to tip of third longitudinal than to that of anterior branch of fifth longitudinal fork; base of latter lying a little beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Nepean River, N.S.W. (Skuse). September.

235. *CHIRONOMUS SUBVITTATUS*, sp.n.

♂.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·090 × 0·022	...	2·27 × 0·55
Size of body.....	0·120 × 0·020	...	3·04 × 0·50

Antennæ ochreous-brown with yellow plumes; basal joint black. Head, face, and clypeus black. Palpi ochreous-brown. Thorax pitch-brown, nitidous, with three indistinct black stripes; three longitudinal rows of yellow hairs; pleuræ and pectus black; scutellum pitch-brown; metanotum black. Halteres pale yellow. Abdomen rather more than twice the length of thorax, black, sub-nitidous, clothed with tolerably long yellow hairs; anal joint and forceps black. Legs pale ochreous-yellow; last four joints of tarsi in fore legs, and last three in intermediate and hind legs somewhat infuscated. In fore legs metatarsus about twice the length of tibia. Wings rather shorter than abdomen, hyaline, with brassy reflections; costal, first and second longitudinal veins, middle cross-vein, and basal half of fourth longitudinal brownish-ochreous. Costal and third longitudinal veins meeting a short distance before apex of wing; auxiliary vein very indistinct towards tip, joining costa about opposite middle of posterior branch of fifth longitudinal fork; second longitudinal vein pale, fairly distinct, running nearer to third than to first longitudinal vein, reaching costa at a point about $\frac{1}{3}$ the distance from tip of first to tip of third longitudinal vein; fourth longitudinal vein pale beyond

cross-vein, not quite reaching wing-margin, its tip situated about midway between tips of third longitudinal and anterior branch of fifth longitudinal fork; base of latter lying opposite middle cross-vein, its posterior branch half the length of anterior.

Hab.—Walcha, N.S.W. (Mr. J F. Schofield). April.

236. *CHIRONOMUS ORESITROPHUS*, sp.n. (Pl. XI., figs. 7 and 8).

♂.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·090 × 0·020	...	2·27 × 0·50
Size of body.....	0·100 × 0·020	...	2·54 × 0·50
♀.—Length of antennæ.....	0·022 inch	...	0·55 millimètre.
Expanse of wings.....	0·097 × 0·027	...	2·44 × 0·68
Size of body.....	0·100 × 0·020	...	2·54 × 0·50

♂ and ♀.—Antennæ, head, and palpi brown; basal joint of antennæ more or less tinged with ochreous. Thorax brown, with three longitudinal rows of brown hairs; pleuræ and pectus brown; scutellum yellowish-brown, sometimes ochreous-yellow; metanotum dark brown. Halteres brown or yellowish-brown. Abdomen in ♂ rather more than twice the length of thorax, much shorter in ♀; densely covered with brownish hair; brown, the segments sometimes indistinctly bordered posteriorly with ochreous; ♂, anal joint and forceps brown; ♀, lamellæ of ovipositor ochreous-yellow. Legs sordid ochreous-brown, densely clothed with brownish hairs, femora indistinctly darker at apex. Tibial spurs dark brown or black. In fore legs metatarsus about $\frac{1}{5}$ longer than tibia. Wings longer than abdomen, almost hyaline, a little iridescent, with distinct brown veins. Costal and third longitudinal veins meeting at apex of wing; auxiliary vein reaching costa almost opposite base of fifth longitudinal fork; second longitudinal vein indistinct, joining costa at a point about $\frac{1}{5}$ the distance from tip of first longitudinal to that of third longitudinal; latter vein much arcuated posteriorly; fourth longitudinal vein indistinct beyond cross-vein, almost reaching margin at a point about $\frac{1}{3}$ the distance from tip of third longitudinal to that

of anterior branch of fifth longitudinal fork ; base of latter lying considerably beyond middle cross-vein, its posterior branch about $\frac{1}{2}$ the length of anterior.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

237. *CHIRONOMUS VESPERTINUS*, sp.n.

♂.—Length of antennæ.....	0.037 inch	...	0.92 millimètre.
Expanse of wings.....	0.090 × 0.020	...	2.27 × 0.50
Size of body.....	0.085 × 0.015	...	2.14 × 0.38

Antennæ bronzy-brown ; basal joint deep brown. Head black. Palpi brownish-ochreous. Thorax black, opaque, more or less hoary, with three longitudinal rows of brownish hairs ; pleuræ and pectus black ; scutellum dark brown, sometimes ochreous-brown ; metanotum black. Halteres dusky brown, basal half of the stem yellow. Abdomen about twice the length of thorax, deep umber-brown or black, moderately clothed with tolerably long yellowish hairs ; anal joint deep umber-brown or black, narrow ; forceps ochreous or ochreous-brown. Legs entirely ochreous-yellow, densely covered with long yellowish hairs. Tibial spurs deep brown or black. In fore legs metatarsus about $\frac{3}{7}$ longer than tibia. Wings rather longer than body, pellucid, with a weak brassy reflection ; costal, first and third longitudinal veins, middle cross-vein, and basal portion of fourth longitudinal yellowish, distinct. Costal and third longitudinal veins meeting somewhat before apex of wing ; auxiliary vein indistinct, joining costa about mid-way between origin of third and tip of first longitudinal vein ; second longitudinal vein indistinct, joining costa a little past tip of first longitudinal ; fourth longitudinal very pale beyond middle cross-vein, slightly bent, scarcely reaching margin, its tip situated at a point $\frac{1}{3}$ the distance from tip of third longitudinal to that of anterior branch of fifth longitudinal fork ; posterior branch of the latter about $\frac{2}{3}$ the length of anterior branch.

Hab.—National Park, near Sydney, N.S.W. (Skuse). Plentiful in July.

238. *CHIRONOMUS BREVIS*, sp.n. (Pl. XI., fig. 9).

♀.—Length of antennæ.....	0·017 inch	...	0·42 millimètre.
Expanse of wings.....	0·057 × 0·015	...	1·44 × 0·38
Size of body.....	0·050 × 0·010	...	1·27 × 0·25

Antennæ light brownish-ochreous; basal joint very pale ochreous-yellow. Head, clypeus, and palpi brownish-ochreous, the latter palest. Thorax umber-brown, with two longitudinal rows of brown hairs; pleuræ and pectus umber-brown, more or less tinged with pale ochreous-yellow; scutellum ochreous-brown, fringed with long brown hairs; metanotum dusky umber-brown. Halteres dusky, base of the stem pale. Abdomen short, robust, dusky umber-brown, rather densely clothed with a short brown pubescence; lamellæ of ovipositor ochreous-yellow. Legs pale ochreous-yellow, with a pale pubescence. Tibial spurs black or deep brown. In fore legs metatarsus rather more than $\frac{1}{4}$ longer than tibiæ. Wings longer than body, pellucid, with brassy reflections; costal and first and third longitudinal veins light brown, distinct, remaining veins fairly distinguishable. Costal and third longitudinal veins meeting at apex of wing; auxiliary vein very pale, joining costa somewhat beyond middle cross-vein; second longitudinal scarcely distinguishable, running close to first longitudinal; fourth longitudinal much paler beyond middle cross-vein, very little bent, its tip nearer to tip of costal than to tip of anterior branch of fifth longitudinal fork; posterior branch of the latter $\frac{1}{2}$ the length of anterior branch.

Hab.—Sydney (Skuse). A single specimen.

b.—*Wings spotted.*

239. *CHIRONOMUS NUBIFER*, sp.n.

♂.—Length of antennæ.....	0·055 inch	...	1·39 millimètres.
Expanse of wings.....	0·140 × 0·040	...	3·55 × 1·01
Size of body.....	0·200 × 0·033	...	5·08 × 0·84
♀ —Length of antennæ	0·025 inch	...	0·62 millimètre.
Expanse of wings.....	0·140 × 0·040	...	3·55 × 1·01
Size of body.....	0·120 × 0·027	...	3·04 × 0·68

♂ and ♀.—Antennæ smoky-brownish ; first joint of scapus deep black, somewhat hoary when viewed in a certain light. Head and clypeus brown or black. Palpi brown. Thorax greyish-black, with a very fine median furrow beset with short yellow hairs and two parallel lateral rows of rather long yellow hairs ; pleuræ, pectus, scutellum and metanotum deep brown or black, scutellum fringed with long yellow hairs. Halteres yellow. Abdomen in ♂ about three times, in the ♀ about twice, the length of thorax, deep brownish-black, densely clothed with yellow hairs ; ♂ anal joint and forceps deep brownish-black. Legs very pale ochreous-yellow, densely clothed with pale yellow hairs, particularly long and dense in the fore tarsi ; coxæ brown, and femora generally with a more or less brownish tinge. In fore legs metatarsus in ♂ about $\frac{1}{4}$, in the ♀ $\frac{1}{3}$, longer than tibia. Tibial spurs black or deep brown. Wings in ♂ longer, in ♀ shorter, than the abdomen, pellucid, with several small pale violaceous markings ; one enveloping the fourth longitudinal vein immediately beyond cross-vein, a second between third and fourth longitudinal veins mid-way to apex of wing, a third at apex, one below each of these between fourth longitudinal vein and anterior branch of fifth longitudinal, another at base of fork of latter, and lastly two more behind fifth longitudinal ; veins ochreous-yellow. Costal and third longitudinal veins meeting a short distance before apex of wing ; auxiliary vein very pale, joining costa opposite middle of posterior branch of fifth longitudinal fork ; second longitudinal vein indistinct, joining costa at a point $\frac{1}{5}$ the distance from tip of first to that of third longitudinal ; fourth longitudinal vein very pale beyond cross-vein, almost reaching margin, its tip situated almost mid-way between tips of third longitudinal and anterior branch of fifth longitudinal fork, somewhat nearer former ; base of fifth longitudinal fork lying somewhat beyond middle cross-vein, its posterior branch about $\frac{1}{2}$ the length of anterior,

Hab.—Wheeny Creek, Hawkesbury District, Berowra, Hexham, Armidale and Sydney, N.S.W. (Skuse). January.

It is not possible to ascertain from the descriptions to what genera of the Chironomina the following should be referred, mention of most of the characters essential to notice being entirely omitted. Those described by Walker all fall into the section with naked wings, while *C. conjunctus*, *C. oppositus*, *C. applicatus*, and *C. alternans* have the tibia longer than the metatarsus in the fore-legs. I do not believe that *C. conjungens*, *C. opponens*, *C. reflectus*, and *C. proximus*, named by Walker in his "Notes," have ever been described.

240. CHIRONOMUS ALTERNANS, Walker.

Chironomus alternans, Walk., Insecta Saundersiana, Vol. I. Diptera, 1856, p. 423 (Div. 1, Alæ nudæ. Sub-div. 1, Halteres pallidi).

♂.—*Testaceus; antennæ fusæ; thorax vittis duabus dorsalibus lateribusque viridibus; abdomen viride, pubescens, vitta interrupta fusca dorsali; pedes virides, pubescentes, tibiis et tarsorum articulis apice fuscescentibus; alæ limpidæ, venis testaceis, litura discali sub-obscuriore.*

"Testaceous. Antennæ brown. Thorax green on each side, and with two green dorsal stripes. Abdomen green, pubescent, with an interrupted brown dorsal stripe. Legs green, long, slender, pubescent; tips of the tibiæ and of the joints of the tarsi brownish; fore-tibia very much longer than the fore-metatarsus. Wings limpid; veins testaceous; discal mark a little darker, not distinct. Length of the body 4 lines, of the wings 6 lines.

Hab.—"New South Wales."

241. CHIRONOMUS APPLICATUS, Walker.

Chironomus applicatus, Walk., Insecta Saundersiana, Vol. I. Diptera, 1856, p. 424 (Div. 1, Alæ nudæ. Sub-div. 1, Halteres pallidi).

♀.—*Canus; antennæ fusæ; thorax fusco trivittatus; abdomen fuscum, fasciis ventrequæ canis; pedes viridescentes, sub-pubescentes, tarsis fere totis femoribusque tibiisque apice fuscescentibus; alæ sub-cinereæ, venis fuscis, litura discali obscuriore.*

“Hoary. Antennæ brown, testaceous at the base. Thorax with three brown stripes, the lateral pair indistinct. Abdomen brown, with a hoary band on the hind border of each segment; under side hoary. Legs greenish, long, slender, slightly pubescent; tarsi, except towards the base and tips of the femora and of the tibiæ, brownish; fore tibia very much longer than the fore metatarsus. Wings greyish; veins brown; discal mark darker brown. Halteres testaceous. Length of the body, $4\frac{1}{2}$ lines; of the wings, 7 lines.

Hab.—“Van Diemen’s Land.”

242. *CHIRONOMUS DUPLEX*, Walker.

Chironomus duplex, Walk., *Insecta Saundersiana*, Vol. I. Diptera, 1856, p. 424 (Div. 1. Alæ nudæ. Sub-div. 1. Halteres pallidi).

“♀.—*Albido-viridis*; antennæ testaceæ, fusco fasciatæ; thorax vittis tribus obscure cinereo-fuscis; abdomen fuscum, albido tomentosum, fasciis lateribusque albido-viridibus; pedes viridescentes, tarsorum articulis apice fuscis, alæ limpidæ, venis halteribusque testaceis, litura discali fusca.

“Whitish-green. Antennæ testaceous; sutures and tips brown. Thorax with three dark greyish-brown stripes. Abdomen above brown, with whitish tomentum; sides and hind borders of the segments whitish-green. Legs greenish, long, slender; tips of the joints of the tarsi brown. Wings limpid; veins testaceous; discal mark brown. Halteres testaceous. Length of the body, $4\frac{1}{2}$ lines; of the wings, 7 lines.

Hab.—“Van Diemen’s Land.”

243. *CHIRONOMUS IMITANS*, Walker.

Chironomus imitans, Walk., *Insecta Saundersiana*, Vol. I. Diptera, 1856, p. 425 (Div. 1. Alæ nudæ. Sub-div. 1. Halteres pallidi).

“♂.—*Pallide viridis; antennæ fuscae; thorax vittis tribus pectorisque disco nigro-cinereis; pedes tibiis et tarsorum articulis apice fuscescentibus; alæ limpidæ, venis albidis, litura discali fusca.*

“Pale green. Antennæ brown. Thorax with three blackish-grey stripes. Pectus with a blackish-grey disc. Abdomen with a broad blackish-grey band on the fore border of each segment. Legs pale green, long, slender; tips of the tibiæ and of the joints of the tarsi brownish. Wings limpid; veins whitish; discal mark brown. Length of the body, 4 lines; of the wings, 6 lines.

Hab.—“Van Diemen’s Land.”

244. *CHIRONOMUS OPPOSITUS*, Walker.

Chironomus oppositus, Walk., *Insecta Saundersiana*, Vol. I. Diptera, 1856, p. 425 (Div. 1, Alæ nudæ. Sub-div. 1. Halteres pallidi).

“♂.—*Pallide testaceus aut viridis; antennæ fuscae; thorax vittis tribus rufescentibus; abdomen pubescens, viride fasciis fuscis; pedes pallide virides pubescentes, tarsis apice fuscis; alæ limpidæ, venis albidis, litura discali fusca.*

“Pale testaceous, green (?) while living. Antennæ brown. Thorax with three reddish stripes. Abdomen pubescent, green, with a brown band on each segment. Legs pale green, long, slender, pubescent; tarsi brown towards the tip; fore tibia very much longer than the fore metatarsus. Wings limpid; veins whitish; discal transverse vein brown. Length of the body $3\frac{1}{2}$ lines; of the wings 5 lines.

Hab.—“Van Diemen’s Land.”

245. *CHIRONOMUS CONJUNCTUS*, Walker.

Chironomus conjunctus, Walk., *Insecta Saundersiana*, Vol. I. Diptera, 1856, p. 425 (Div. 1. Alæ nudæ. Sub-div. 1. Halteres pallidi).

“♂ and ♀.—*Viridis; antennæ pallide fuscae; thorax vittis tribus rufescentibus; pedes pallide virides, tarsis apice fuscis;*

alæ limpidæ, venis pallidis, litura discali nulla. ♂.—*Abdomen pubescens apice fuscum.*

“Green. Antennæ pale brown. Thorax with three reddish stripes. Legs pale green, slender; tarsi brown towards the tips; fore tibia much longer than the fore metatarsus. Wings limpid; veins pale; no discal mark. ♂.—Abdomen pubescent, brown at the tip, much longer than that of the ♀. Length of the body $2.2\frac{1}{2}$ lines; of the wings $3\frac{1}{2}$ lines.

Hab.—“Van Diemen’s Land.”

246. *CHIRONOMUS AUSTRALIS*, Macquart.

♂.—*Chironomus australis*, Macq., Diptères Exotiques, 2nd Suppl. 1847, p. 9; ♀, 4th Suppl. 1850, p. 12.

“♂.—*Thorace rufescente, vittis fuscis; scutello rufescente. Abdomine nigricante, incisuris rufis. Pedibus rufis. Alis pallidis.*

“Antennæ with brownish plumes. Metathorax black, with a light grey down. The tawny rings to the incisions of the abdomen narrow. Extremity of femora and base of the tibiæ brownish; a little brown at the extremity of the tibiæ and the joints of the tarsi; intermediate and hind tibiæ finely haired beneath. Wings with the transverse vein a little brownish. Long. $3\frac{1}{2} \times 1$.

Hab.—“Tasmania.”

Obs.—Macquart says that the ♀ differs only by the ordinary sexual characters.

Genus 2. *ORTHOCLADIUS*, V.d. Wulp.

Orthocladius, V.d. Wulp, Tijds. Entom. 1873-74, XVII. p. 132.

Antennæ 2- + 12-jointed in ♂, 2- + 5-jointed in ♀. Thorax with three stripes. Wings naked. Third longitudinal vein straight or only a little curved, going nearly to end of anterior margin. Costal vein sometimes extending a little beyond tip of third longitudinal. Posterior branch of fifth longitudinal fork straight or a little bent. Legs unicoloured; or only darker at articulations. In fore legs metatarsus considerably shorter than tibia. ♂ forceps slender.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE.							
		Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
247	<i>O. annuliventris</i> ...	67	33	...	...	66	15	15	4	...	...	...	...
248	<i>O. numerosus</i> ...	67	33	...	...	67	10	15	8	...	...	...	...
249	<i>O. venustulus</i> ...	61	39	...	...	73	5	21	1	...	...	...	...
250	<i>O. insolidus</i> ...	67	33	...	...	54	0	27	19	...	...	...	...
251	<i>O. pullulus</i> ...	1	...	66	34	...	...	...	...	54	10	20	16

247. ORTHOCLADIUS ANNULIVENTRIS, sp.n. (Pl. XI., fig. 10).

♂.—Length of antennæ..... 0·035 inch ... 0·88 millimètre.

Expanse of wings..... 0·090 × 0·023 ... 2·27 × 0·58

Size of body..... 0·110 × 0·020 ... 2·79 × 0·50

Antennæ black, plumes somewhat bronzy towards tips. Head, clypeus, and palpi black, the latter sometimes more brownish. Thorax black, nitidous, glabrous, with no trace of stripes; pleuræ, pectus, scutellum, and metanotum black, the last two opaque. Halteres pitch-brown. Abdomen about twice and half the length of thorax, black, nitidous, whole of the first segment, anterior third of second, and anterior half of fourth and fifth segments pale brownish-yellow or ochreous; sparingly covered with short brownish hairs; anal joint and forceps short. Legs pitch-brown, genua ochreous-yellow, and fore and intermediate tibiæ with a very broad ring of white near the base. In fore legs tibia nearly twice the length of metatarsus. Wings as long as abdomen, hyaline,

with a more or less brassy iridescence ; veins light umber-brown. Third longitudinal vein meeting the costa some distance before apex of wing ; auxiliary vein pale, joining costa opposite middle cross-vein ; costal vein extending beyond tip of third longitudinal, about $\frac{1}{5}$ the distance to tip of fourth longitudinal vein ; latter almost reaching margin, its tip situated nearer to tip of costa than to that of anterior branch of fifth longitudinal fork ; second longitudinal vein pale, reaching costa about midway between tips of first and third longitudinal veins ; base of fifth longitudinal fork lying considerably beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Blue Mountains (Masters and Skuse) ; Sydney (Skuse). September to January.

Obs.—The white rings on the anterior two pairs of legs at once distinguish this species. Van der Wulp says with reference to the legs of the species of this genus, "Pooten eenkleurig, hoogstens aan de gewrichten donker geteekend," so the above seems a peculiar exception to the general rule.

248. ORTHOCLADIUS NUMEROSUS, sp.n. (Pl. xi., fig. 11).

♂.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·075 × 0·017	...	1·89 × 0·42
Size of body.....	0·085 × 0·015	...	2·14 × 0·38

Antennæ black ; plumes somewhat bronzy at the tips. Head and clypeus black. Palpi deep dusky brown. Thorax black, levigate, with two longitudinal rows of black hairs ; pleuræ, pectus, and metanotum black, levigate. Scutellum pitch-brown, fringed with black hairs. Halteres pitch-brown. Abdomen more than twice the length of thorax, deep black, opaque, clothed with brown hairs : anal joint and forceps black. Legs light greyish-brown to pitch-brown, with brownish hairs. In fore legs tibia $\frac{1}{3}$ longer than metatarsus. Wings as long or longer than abdomen, pellucid, with a pale bluish tint, and a brassy iridescence ; costal and first and third longitudinal veins pale greyish-yellow. Auxiliary vein

pale, indistinct, joining costa about mid-way between middle cross-vein and tip of first longitudinal; third longitudinal vein joining costa very much before apex of wing; costal vein extending beyond third longitudinal vein almost $\frac{1}{3}$ distance from that to tip of fourth longitudinal; the tip of latter indistinctly reaching wing-margin, situated considerably nearer to tip of third longitudinal than to that of anterior branch of fifth longitudinal fork; second longitudinal vein pale, joining costa somewhat before mid-way between tips of first and third longitudinal veins; base of fifth longitudinal fork lying much beyond middle cross-vein, and almost opposite the tip of auxiliary vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

249. *ORTHOCLADIUS VENUSTULUS*, sp.n. (Pl. XI., fig. 12).

♂.—Length of antennæ	0·032 inch	...	0·80 millimètre.
Expanse of wings.....	0·065 × 0·017	...	1·66 × 0·42
Size of body.....	0·085 × 0·015	...	2·14 × 0·38

Antennæ light greyish-brown, plumes with pale reflections; first joint of the scapus deep brown or black, levigate, second pale yellow. Head and clypeus brownish-black. Palpi light greyish-brown. Thorax deep brownish-black, levigate, somewhat pruinose, with two longitudinal rows of brownish hairs; pleuræ pitch-brown; pectus dark brown or brownish-black; scutellum pitch-brown; metanotum black or deep brownish-black. Halteres pale yellow. Abdomen nearly three times length of thorax, pitch-brown, levigate, rather densely clothed with brown hairs; anal joint and forceps pitch-brown. Legs light greyish-brown to pitch-brown, densely pubescent. Wings about the length of abdomen, pellucid, with a delicate violaceous tint and brassy reflection, veins sordid pale ochreous. Costal and third longitudinal veins meeting immediately before apex of wing; auxiliary vein indistinctly joining costa opposite tip of posterior branch of fifth longitudinal fork; second longitudinal very pale, running close to first longitudinal, afterwards close to costa, terminating a little beyond tip

of first longitudinal; fourth longitudinal very pale beyond cross-vein, almost reaching wing-margin, its tip situated at a point $\frac{1}{3}$ the distance from tip of third longitudinal to that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Berowra, Hawkesbury district, N.S.W. (Masters).

250. *ORTHOCLADIUS INSOLIDUS*, sp.n. (Pl. XI., fig. 13).

♂.—Length of antennæ.....	0.025 inch	...	0.62 millimètre.
Expanse of wing.....	0.055 × 0.017	...	1.39 × 0.42
Size of body.....	0.060 × 0.012	...	1.54 × 0.30

Antennæ light brown; plumes with yellowish reflections; basal joint deep brown or black. Head, clypeus and palpi brown or brownish-black. Thorax black, slightly ochreous at the humeri and brown longitudinally in front of scutellum, opaque; pleuræ brown, tinged with ochreous; pectus and metanotum black, levigate; scutellum ochreous. Halteres ochreous-yellow. Abdomen rather more than twice the length of thorax, umber brown, levigate, tinged with ochreous-brown beneath; clothed with yellowish hairs; anal joint and forceps short, deep brown. Legs light greyish-brown, with a pale pubescence; the genua yellow. In fore legs tibia about $\frac{1}{3}$ longer than metatarsus. Wings longer than abdomen, pellucid, with a delicate brown tint, and brassy reflections; costal, first and third longitudinal veins, and basal half of fourth longitudinal vein, pale greyish-brown. Auxiliary vein very indistinct, joining costa at a point almost mid-way between middle cross-vein and tip of first longitudinal vein; second longitudinal vein entirely wanting; third longitudinal joining costa very far from apex of wing and before tip of anterior branch of fifth longitudinal fork; costal vein extending beyond tip of third longitudinal $\frac{1}{5}$ the distance from that to tip of fourth longitudinal; latter almost reaching wing-margin, its tip situated at a point just before apex and at a point almost $\frac{2}{3}$ the distance from tip of third longitudinal to that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond a point mid-way

between middle cross-vein and tip of first longitudinal, its posterior branch rather more than $\frac{1}{2}$ the length of anterior.

Hab.—Middle Harbour, Sydney (Skuse). August.

251. *ORTHOCLADIUS PULLULUS*, sp.n. (Pl. xi., fig. 14).

♀.—Length of antennæ..... 0·008 inch ... 0·20 millimètre.

Expanse of wings..... 0·042 × 0·015 ... 1·06 × 0·38

Size of body..... 0·055 × 0·008 ... 1·39 × 0·20

Antennæ brown. Head, face, and clypeus black or brownish-black. Palpi sordid ochreous-brown. Thorax black or brownish-black, levigate, with two longitudinal rows of pale hairs; pleuræ and pectus brownish-black; scutellum and metanotum black or brownish-black. Halteres brownish-black, the stem ochreous-brown. Abdomen twice the length of the thorax, black or brownish-black, sparingly pubescent. Legs pale greyish-yellow or sordid ochreous, with a pale pubescence. In fore legs tibia twice the length of metatarsus. Wings longer than abdomen, pellucid, almost hyaline, with a more or less brassy reflection; costal and first and third longitudinal veins brownish. Auxiliary vein very pale and indistinct, scarcely reaching the costa, disappearing opposite base of fifth longitudinal fork; second longitudinal vein extremely pale, joining the costa opposite tip of posterior branch of fifth longitudinal fork; third longitudinal vein joining costa much before apex of wing and opposite tip of anterior branch of fifth longitudinal; middle cross-vein very short and indistinct; costal vein extending beyond tip of third longitudinal $\frac{1}{5}$ the distance from that to tip of fourth longitudinal vein; latter scarcely sinuose, pale for whole of its length, directed posteriorly for whole of its length, almost reaching the wing-margin, its tip situated at a point considerably nearer to tip of anterior branch of fifth longitudinal fork than to that of third longitudinal; base of fifth longitudinal fork lying beyond middle cross-vein, its posterior branch not quite $\frac{1}{2}$ the length of anterior; both branches scarcely reaching posterior margin.

Hab.—Sydney (Skuse). September?.

Genus 4. DOLOPLASTUS, gen.nov.

Antennæ 2-+6-jointed in ♂, otherwise as in ♀ of preceding species. Wings naked. Third longitudinal vein nearly straight. Costal vein extending a little beyond tip of third longitudinal. Posterior branch of fifth longitudinal fork straight. Legs unicoloured. In fore legs metatarsus considerably shorter than tibia. ♂ forceps robust.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE.							
		Of the metatarsus in the hind feet.	Of the second tarsal joint of the hind feet.	Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
252	<i>Dolop. monticola</i> ...	67	33	...	...	61	14	14	11	...	...	...	...

252. DOLOPLASTUS MONTICOLA, sp.n. (Pl. XII., fig. 15).

♂.—Length of antennæ..... 0·012 inch ... 0·30 millimètre.
 Expanse of wings..... 0·047 × 0·012 ... 1·18 × 0·30
 Size of body..... 0·075 × 0·012 ... 1·89 × 0·30

Antennæ light brown or ochreous-brown. Head, face, and clypeus dark brown or brownish-black. Palpi ochreous-brown. Thorax dark brown or brownish-black, opaque, with two longitudinal rows of yellowish hairs; pleuræ and pectus dark brown or brownish-black; scutellum brown, sometimes brownish-ochreous; metanotum dark brown or brownish-black. Halteres brown or brownish. Abdomen twice to twice and a half the length of thorax, dark brown or brownish-black, opaque, with a short yellow pubescence; anal joint and forceps dark brown or brownish-black,

latter robust with short wide arm with a minute spine at its inner angle. Legs pitch-brown more or less tinged with ochreous. In fore legs tibia twice the length of metatarsus. Wings the length of the abdomen, semi-diaphanous, with a very pale brownish tint, the costal, first and third longitudinal veins, middle cross-vein and basal half of fourth longitudinal vein brownish-ochreous. Auxiliary vein most indistinct, apparently terminating near costa before origin of second longitudinal vein; latter also very pale and indistinct, joining costa mid-way between tips of first and third longitudinal veins; third longitudinal vein directed slightly upwards, joining much before apex of wing; costal vein extending beyond tip of third longitudinal nearly $\frac{1}{5}$ the distance from that to tip of fourth longitudinal; latter indistinct beyond cross-vein, almost reaching wing-margin, its tip at apex, and midway between tips of third longitudinal and anterior branch of fifth longitudinal fork; base of latter lying some distance beyond middle cross-vein, its anterior branch slightly arcuated at base, somewhat more than twice the length of posterior branch.

Hab.—Mount Kosciusko, N.S.W.

Genus 3. CAMPTOCLADIUS, V.d. Wulp.

Camptocladius, V.d. Wulp, Tijds. Entom. 1873-74, XVII. p. 133.

Antennæ 2-+12-jointed in ♂, 2-+5-jointed in ♀. Wings naked. Third longitudinal vein bent upwards, sometimes short and terminating considerably before end of anterior margin, or running for some distance close along anterior margin; consequently the first posterior cell very broad. Posterior branch of fifth longitudinal fork sinuose. Feet unicoloured, usually black. In fore legs metatarsus considerably shorter than tibia. Anal joint in ♂ short and broad; forceps broad, white or with white hairs.*

* I have lately seen, in the collection of insects in the Australian Museum recently gathered by Mr. Helms at high elevations on Mount Kosciusko examples of two or three new species belonging to this genus.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE.							
		Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsus in the hind feet	Of the second tarsal joint in the hind feet	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
253	<i>Camp. terjugus</i> ...	...	...	63	37	...	...	...	...	61	12	19	8
254	<i>Camp. vestitus</i> ...	...	...	66	34	...	...	...	..	59	13	19	9
255	<i>Camp. crassipennis</i> ...	...	...	67	33	...	...	...	...	60	0	34	6
256	<i>Camp. invenustulus</i> ...	...	...	67	33	...	...	..	...	56	0	33	11
257	<i>Camp. Macleayi</i> ...	65	35	66	34	69	10	15	6	65	7	22	6

253. CAMPTOCLADIUS TERJUGUS, sp.n. (Pl. XII., fig. 16).

♀.—Length of antennæ..... 0·017 inch ... 0·42 millimètre.

Expanse of wings..... 0·075 × 0·020 ... 1·89 × 0·50

Size of body..... 0·090 × 0·017 ... 2·27 × 0·42

Antennæ dark brown; first joint of scapus pale brown or yellow. Head brown or ochreous-brown, with a few hairs along hinder margin of eyes. Clypeus and palpi brown, former sometimes with yellowish pubescence. Thorax yellow, often slightly tinged with brown, with three very prominent dusky castaneous-brown, sometimes almost black, stripes, confluent at posterior margin; intermediate stripe running whole length of thorax, suddenly narrowed a little below middle; a sparse row of dark brown hairs between stripes; pleuræ yellow, with a small, more or less dark brown indeterminate spot under origin of wing; pectus dusky brown; scutellum umber-brown, fringed with long dark

brown hairs; metanotum dusky castaneous-brown, almost black, with a yellow median line. Halteres deep castaneous-brown, almost fuliginous, stem yellow. Abdomen about twice the length of thorax, clothed with dark brown hairs, superior segments dusky castaneous-brown with a very narrow border of yellow posteriorly; last two segments same colour beneath; venter yellow. Legs deep umbrous-brown, trochanters and bases of femora yellow. In fore legs tibia $\frac{3}{8}$ longer than metatarsus. Wings rather longer than abdomen, yellow at root, pellucid, almost hyaline, iridescent; costal and first and third longitudinal veins brownish. Costal extending beyond third longitudinal about $\frac{1}{3}$ the distance to tip of fourth longitudinal; auxiliary vein indistinct, joining costa opposite base of fifth longitudinal fork; second longitudinal vein pale, reaching costa at a point about $\frac{2}{5}$ the distance from tip of first longitudinal to that of third longitudinal; middle cross-vein pale; fourth longitudinal vein pale, almost reaching the margin immediately below apex of wing; tip of third longitudinal rather nearer apex of wing than tip of anterior branch of fifth longitudinal fork; posterior branch of latter rather more than $\frac{1}{2}$ the length of anterior.

Hab.—Elizabeth Bay, near Sydney (Masters and Skuse). February.

Obs.—A very distinct and unmistakable insect.*

254. CAMPTOCLADIUS VESTITUS, sp.n.

♀.—Length of antennæ.....	0·012 inch	...	0·30 millimètre.
Expanse of wings.....	0·052 × 0·016	...	1·32 × 0·40
Size of body.....	0·065 × 0·012	...	1·66 × 0·30

Antennæ dark brown; basal joint ochreous-yellow. Head brown. Face, clypeus, and palpi ochreous or brownish-ochreous. Thorax ochreous-yellow or brownish-yellow, levigate, with three dark brown stripes; two longitudinal rows of yellowish hairs;

* Some specimens in the collection of the Australian Museum, recently obtained by Mr. Helms at an elevation of 5000 feet on Mount Kosciusko, belong to a closely related species.

pleuræ and pectus ochreous or brownish-yellow, the pectus sometimes brown; scutellum ochreous-brown; metanotum dark brown. Halteres yellow. Abdomen about twice the length of thorax, light umbrous-brown, with a yellowish pubescence. Legs ochreous-brown, sometimes darker. In fore legs tibia more than twice length of metatarsus. Wings longer than abdomen, hyaline, with a more or less roseous brassy reflection; costal, and first and third longitudinal veins brownish. Costal extending beyond tip of third longitudinal vein $\frac{1}{4}$ the distance from that to tip of fourth longitudinal; auxiliary vein extremely pale and indistinct, apparently joining costa midway between middle cross-vein and tip of first longitudinal vein, and opposite base of fifth longitudinal fork; second longitudinal vein very pale, running for some distance along costa before joining, terminating at a point nearly midway between tips of first and third longitudinal veins; middle cross-vein pale; fourth longitudinal pale for whole of its length, almost reaching wing-margin, directed a little posteriorly, terminating at apex, midway between tip of third longitudinal vein and anterior branch of fifth longitudinal fork; posterior branch of the latter $\frac{1}{2}$ the length of anterior branch.

Hab.—Elizabeth Bay, near Sydney (Skuse). Two specimens.

255. CAMPTOCLADIUS CRASSIPENNIS, sp.n. (Pl. XII., fig. 17).

♀.—Length of antennæ.....	0·012 inch	...	0·30 millimètre.
Expanse of wings.....	0·065 × 0·020	...	1·66 × 0·50
Size of body.....	0·050 × 0·016	...	1·27 × 0·40

Antennæ entirely brown. Head brown. Clypeus and palpi ochreous or brownish. Thorax ochreous or brownish-yellow, dull, almost completely covered by three deep brown or black stripes, confluent at the scutellum, median line scarcely narrowing posteriorly, extending whole length of thorax, interstices of stripes very narrow, with a row of yellow hairs; pleuræ and pectus brown to dark brown, former sometimes tinged with ochreous; scutellum

pale ochreous-yellow ; metanotum dark brown. Halteres yellow. Abdomen scarcely twice the length of thorax, sordid brown, dull, more or less tinged with ochreous, sparingly clothed with yellowish hairs ; lamellæ of ovipositor ochre-yellow. Legs more or less ochreous-brown, trochanters and bases of femora yellowish. In fore legs tibia twice the length of metatarsus. Wings longer than entire body, very angular at base, semi-diaphanous, having the appearance of ground glass, without iridescence ; costal, first and third longitudinal, and basal half of fourth longitudinal veins pale brownish. Costal and third longitudinal veins meeting much before apex of wing, considerably nearer to it than to tip of anterior branch of fifth longitudinal fork ; auxiliary vein extremely indistinct, apparently joining costa somewhat beyond middle cross-vein ; second longitudinal vein indistinguishable or altogether wanting ; first and third longitudinal veins enormously thickened beyond middle cross-vein, third longitudinal attenuating towards tip ; fourth longitudinal very pale, directed posteriorly, not reaching margin, terminating considerably below apex of wing and much nearer to tip of anterior branch of fifth longitudinal than to that of third longitudinal ; base of fifth longitudinal fork lying much beyond middle cross-vein, its posterior branch more than $\frac{1}{2}$ the length of anterior branch.

Hab.—Rodd Island, Port Jackson (Skuse). August.

Obs.—Possibly a marine species. It is very likely that some small insects seen by me in great numbers flying about the seaweed and damp rocks on another island at low water also belong to this species.

256. CAMPTOCLADIUS INVENUSTULUS, sp.n. (Pl. XII., fig. 18).

♀.—Length of antennæ.....	0·010 inch	...	0·25 millimètre.
Expanse of wings.....	0·045 × 0·013	...	1·13 × 0·32
Size of body.....	0·042 × 0·008	...	1·06 × 0·20

Antennæ entirely ochreous-yellow or brownish-ochreous. Head dark brown. Face, clypeus and palpi ochreous-brown. Thorax

ochreous-brown, levigate, with three more or less distinct brown or brownish stripes, intermediate one sometimes paler than the rest; sometimes brownish immediately before scutellum; two longitudinal rows of short yellowish hairs; pleuræ and pectus dark brown; scutellum ochreous-brown or ochreous; metanotum dark brown. Halteres pale yellow. Abdomen about twice the length of thorax, rather dusky brown or lighter, tolerably clothed with pale hairs. Legs ochreous or brownish-ochreous. In fore legs tibia twice the length of tarsi. Wings somewhat longer than the entire body, hyaline, with a brassy reflection; costal, and first and third longitudinal veins brown or brownish. Costal extending far beyond tip of third longitudinal vein, reaching apex of wing and nearly reaching tip of fourth longitudinal vein; auxiliary vein indistinct, joining costa opposite base of fifth longitudinal fork and a short distance before tip of first longitudinal vein; second longitudinal entirely wanting; third longitudinal vein thickened towards its tip, running close to costa for a short distance before its tip, terminating opposite tip of anterior branch of fifth longitudinal fork; fourth longitudinal vein pale; base of fifth longitudinal fork lying opposite or scarcely beyond anterior extremity of middle cross-vein; its posterior branch somewhat more than $\frac{1}{2}$ the length of anterior branch.

Hab.—Knapsack Gully, Blue Mountains, N.S.W. (Masters).

257. *CAMPTOCLADIUS MACLEAYI*, sp.n.

♂.—Length of antennæ.....	0·037 inch	...	0·92 millimètre.
Expanse of wings.	0·080 × 0·020	...	2·02 × 0·50
Size of body.....	0·090 × 0·020	...	2·27 × 0·50
♀.—Length of antennæ.....	0·015 inch	...	0·38 millimètre.
Expanse of wings.....	0·080 × 0·029	...	2·02 × 0·73
Size of body.....	0·080 × 0·020	...	2·02 × 0·50

♂ and ♀.—Black, opaque. Antennæ (except basal joint) in ♂ dusky brown. Thorax with two longitudinal rows of short brown hairs. Halteres entirely blackish brown in ♂, brown with sordid

ochreous stem in ♀. Abdomen clothed with brown hairs; in ♂ two and a half, in the ♀ one and a half to twice the length of thorax; lamellæ of ♀ ovipositor often brown. Legs brownish-black; in ♀ often greyish-brown or pitch-brown, covered with brown hairs. In fore legs tibia about twice length of metatarsus. Wings in ♂ longer than abdomen, opaline, with pale veins; in ♀ about length of whole body, pellucid, with a very delicate violaceous tint; the costal and first and third longitudinal veins brownish; in both sexes with a brassy reflection. Costal extending beyond tip of third longitudinal, in ♂ about $\frac{1}{3}$, in ♀ about $\frac{1}{2}$ the distance to tip of fourth longitudinal vein; auxiliary vein joining costa midway between middle cross-vein and tip of first longitudinal vein; second longitudinal vein pale, in ♂ joining costa a little before a point midway between tips of first and third longitudinal veins, in ♀ about $\frac{1}{3}$ the distance between them; third longitudinal directed anteriorly, running close to costa towards its tip, terminating much before apex of the wing; fourth longitudinal vein pale, almost reaching margin, terminating below apex, and considerably nearer to tip of anterior branch of fifth longitudinal fork than to tip of third longitudinal; base of fifth longitudinal fork lying much beyond middle cross-vein, its posterior branch about $\frac{2}{3}$ the length of anterior.

Hab.—Sydney, and other localities in N.S.W. (Masters and Skuse). May to July.

Obs.—A very common insect in Sydney, often observable in immense clouds towards evening.

Genus 4. TANYTARSUS, V.d. Wulp.

Tanytarsus, V.d. Wulp, Tijds. Entom. 1873-74, XVII. p. 134.

Antennæ 2-+12-jointed in ♂, 2-+5-jointed in ♀. Wings haired. Third longitudinal vein straight or almost straight, running to end of anterior margin. Posterior branch of fifth longitudinal fork straight or only slightly bent downwards. In fore legs metatarsus longer than tibia. Forceps of ♂ slender.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE							
		Of the metatarsus in the hind foot.	Of the second tarsal joint in the hind foot.	Of the metatarsus in the hind foot.	Of the second tarsal joint in the hind foot.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
258	<i>T. montanus</i> ...	65	35	63	37	76	0	22	2	76	0	22	2
259	<i>T. inextentus</i> ...	64	36	64	36	75	8	13	4	71	7	17	5
260	<i>T. cereolus</i> ...	62	48	...	...	75	5	18	2	...	...	...	...
261	<i>T. communis</i> ...	...	...	63	37	...	...	...	...	75	7	12	6
262	<i>T. fuscithorax</i> ...	60	40	...	...	73	7	12	8	..	...	...	...
263	<i>T. Ogilbyi</i> ...	...	...	63	37	...	...	...	...	77	0	19	4
264	<i>T. modicus</i> ...	..	...	64	36	...	..	...	...	70	0	21	9

258. TANYTARSUS MONTANUS, sp.n. (Pl. XII., fig. 19).

♂.—Length of antennæ..... 0·047 inch ... 1·18 millimètres.
 Expanse of wings..... 0·098 × 0·025 ... 2·47 × 0·62
 Size of body..... 0·130 × 0·017 ... 3·30 × 0·42

♀.—Length of antennæ..... 0·025 inch ... 0·62 millimètre.
 Expanse of wings..... 0·110 × 0·030 ... 2·79 × 0·76
 Size of body.. 0·085 × 0·017 .. 2·14 × 0·42

♂ and ♀.—Pale ochreous-yellow, levigate ; in ♂ basal joints of antennæ, head and clypeus, posterior half of thorax and pleuræ, pectus and metanotum light ferruginous-brown. Thorax with three longitudinal rows of yellow hairs, intermediate one terminating at the middle ; scutellum fringed with long yellow hairs. Abdomen in ♂ three times, and in ♀ twice, the length of the thorax,

clothed with yellow hairs, last few segments more or less tinged with brownish; ♂ anal joint and forceps somewhat narrower and longer than last abdominal segment; ♀ lamellæ pale yellow. Legs densely clothed with yellow hairs. Tibial spurs black or deep brown. In fore legs metatarsus somewhat more than $\frac{2}{7}$ longer than tibia. Wings in ♂ shorter than abdomen, in ♀ longer than whole body; hyaline, with brassy and roseous reflections, pubescent; veins yellow. Costal and third longitudinal vein meeting a short distance before apex of wing; auxiliary vein reaching costa considerably beyond middle cross-vein; first longitudinal vein joining costa before tip of anterior branch of fifth longitudinal fork, and a little beyond a point midway between middle cross-vein and tip of costa; second longitudinal wanting or so close to first longitudinal as to be indistinguishable; fourth longitudinal vein almost reaching the margin, its tip much nearer to tip of third longitudinal than to that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond middle cross-vein, its posterior branch being about $\frac{1}{2}$ the length of anterior.

Hab.—Blue Mountains, N.S.W. (Masters and Skuse). January.

259. *TANYTARSUS INEXTENTUS*, sp.n. (Pl. XII., figs. 20 & 21).

♂.—Length of antennæ..... 0.042 inch ... 1.06 millimètres.

Expanse of wings..... 0.095 × 0.025 ... 2.39 × 0.62

Size of body..... 0.120 × 0.017 ... 3.04 × 0.42

♀.—Length of antennæ..... 0.017 inch ... 0.42 millimètre.

Expanse of wings..... 0.090 × 0.025 ... 2.27 × 0.62

Size of body..... 0.070 × 0.017 ... 1.77 × 0.42

♂ and ♀.—Antennæ brownish-ochreous with yellow verticils; basal joint brown or brownish. Head, face, and clypeus brown or brownish. Palpi ochreous-yellow or brownish-yellow. Thorax yellow, with three longitudinal rows of yellow hairs, the intermediate one terminating at the middle; in ♂ rather

more than posterior half of thorax, also pleuræ, pectus and metanotum light ferruginous; scutellum yellow; no ferruginous in ♀. Halteres yellow. Abdomen in ♂ rather more than twice the length of thorax, in ♀ much shorter; prasinous, clothed with yellow hairs; ♂ anal joint and forceps short, brownish; ♀ lamellæ of ovipositor yellow. Legs pale ochreous-yellow. Tibial spurs black or deep brown. In fore legs metatarsus three times the length of tibia. Wings in ♂ as long as abdomen, in ♀ longer than whole body; hyaline, with delicate brassy and roseous reflections; veins yellow. Costal and third longitudinal veins meeting some distance before apex of wings; auxiliary vein extremely pale and indistinct, reaching costa about mid-way between middle cross-vein and tip of first longitudinal vein; first longitudinal reaching costa in ♂ a little beyond, in ♀ at a point mid-way between middle cross-vein and tip of costa; second longitudinal very indistinct, reaching costa at a point about $\frac{1}{3}$ the distance from tip of first longitudinal to that of third longitudinal; middle cross-vein pale, scarcely oblique, appearing as a continuation of basal portion of fourth longitudinal vein; third longitudinal appearing as a continuation of middle cross-vein; fourth longitudinal very pale and indistinct, bent considerably downwards at its base, almost reaching wing-margin, its tip situated nearer to tip of third longitudinal than to that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond middle cross-vein, its posterior branch in ♂ more than $\frac{1}{2}$ the length of anterior, about $\frac{1}{2}$ the length in ♀.

Hab.—Sydney (Masters and Skuse). Very common.

Obs.—Very like *T. montanus*, but the length of the metatarsus of the fore legs affords a ready distinguishing character.

260. TANYTARSUS CEREOLUS, sp.n.

♂.—Length of antennæ.....	0·045 inch	...	1·13 millimètres.
Expanse of wings.....	0·085 × 0·020	...	2·14 × 0·50
Size of body.....	0·100 × 0·015	...	2·54 × 0·38

Very pale waxen-yellow; flagellar joints of antennæ smoky. Thorax with three very indistinct pale fulvous stripes; posterior half of metanotum brown. Abdomen pale prasinous. Thorax levigate, with three longitudinal rows of yellow hairs, intermediate one terminating at the middle; scutellum with long yellow hairs. Halteres white. Abdomen nearly three times the length of thorax, densely clothed with yellow hairs; anal joint and forceps narrower than last abdominal segment. Legs clothed with very pale hairs. Tibial spurs black. In fore legs metatarsus $\frac{1}{5}$ longer than tibia. Wings rather longer than abdomen, pellucid, almost hyaline, with brassy reflections; veins yellow. Costal and third longitudinal veins meeting somewhat before apex of wing; auxiliary vein extremely pale and indistinct, reaching costa at a point somewhat beyond a point mid-way between middle cross-vein and tip of first longitudinal; first longitudinal vein reaching costa much nearer to tip of costa than to middle cross-vein; second longitudinal vein very pale, indistinct, running close to first longitudinal, joining costa at a point $\frac{1}{3}$ the distance from tip of first longitudinal to that of costa; fourth longitudinal vein very pale beyond cross-vein, little arcuated at base, almost reaching wing-margin, terminating at a point situated $\frac{1}{3}$ the distance from tip of third longitudinal vein to that of anterior branch of fifth longitudinal fork; base of latter lying some distance beyond middle cross-vein, its posterior branch about $\frac{1}{2}$ the length of anterior.

Hab.—Gosford, N.S.W. (Skuse). August.

261. TANYTARSUS COMMUNIS, sp.n.

♀.—Length of antennæ.....	0·020 inch	...	0·50 millimètre.
Expanse of wing.....	0·095 × 0·030	...	2·39 × 0·76
Size of body.....	0·090 × 0·017	...	2·27 × 0·42

Antennæ ochreous or brownish-ochreous. Head, face, clypeus and palpi ochreous-yellow to brownish-ochreous. Thorax, pleuræ, pectus and metanotum ochreous-yellow to brownish-ochreous, the

former levigate with three longitudinal rows of yellow hairs; intermediate row terminating at middle; scutellum yellow. Halteres pale yellow. Abdomen about twice the length of thorax, prasinous, with yellow hairs; lamellæ of the ovipositor ochreous-yellow. Legs ochreous-yellow. Tibial spurs black or deep brown. In the fore legs metatarsus three times the length of tibia. Wings longer than entire body, hyaline, with brassy and roseous reflections; the veins yellow. Costal and third longitudinal veins meeting considerably before apex of wing; auxiliary vein very pale and indistinct, reaching costa mid-way between middle cross-vein and tip of first longitudinal vein; first longitudinal vein reaching costa mid-way between middle cross-vein and tip of costa, and opposite middle of anterior branch of fifth longitudinal fork; second longitudinal vein very indistinct, reaching costa $\frac{1}{3}$ the distance from tip of first longitudinal to that of third longitudinal; middle cross-vein very little oblique, third longitudinal appearing as a continuation of it; fourth longitudinal very indistinct beyond cross-vein, nearly reaching wing-margin, its tip situated at a point about mid-way between tip of costa and that of anterior branch of fifth longitudinal fork; base of latter lying a little beyond the middle cross-vein, its posterior branch about $\frac{1}{2}$ the length of anterior.

Hab.—Berowra, Hexham Swamps and Sydney, N.S.W. (Masters and Skuse). April to July.

262. TANYTARSUS FUSCITHORAX, sp.n. (Pl. XII., fig. 22).

♂.—Length of antennæ.....	—	inch	...	—	millimètre.
Expanse of wings.....	0·080 × 0·017	...		2·02 × 0·42	
Size of body.....	0·090 × 0·016	...		2·27 × 0·40	

Basal joints of antennæ (remainder lost) brown. Head, face, and clypeus brown or brownish. Palpi ochreous-yellow. Thorax brownish, opaque, with three brown stripes, lateral ones dark; three longitudinal rows of yellow hairs; intermediate one

terminating at base of anterior stripe, the others continuing to scutellum; pleuræ, pectus, scutellum, and metanotum brown. Halteres white. Abdomen nearly three times the length of thorax, sordid yellowish-brown, clothed with yellow hairs; anal joint and forceps narrow. Legs whitish-ochreous. Spurs deep brown. In fore legs metatarsus about $2\frac{1}{2}$ times the length of tibia. Wings longer than abdomen, hyaline, with a brassy reflection; veins pale yellow. Costal and third longitudinal veins meeting very much before the apex of wing; auxiliary vein very indistinct, reaching costa at a point about mid-way between middle cross-vein and tip of first longitudinal; first longitudinal reaching costa nearer to tip of costa than to middle cross-vein; second longitudinal very indistinct, reaching costa at a point nearly mid-way between tips of first and third longitudinal veins; middle cross-vein scarcely oblique, appearing as portion of third longitudinal; fourth longitudinal very indistinct, almost reaching wing-margin, its tip situated nearer to tip of third longitudinal vein than that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Narrabeen Lagoon, near Manly, N.S.W. (Skuse). October.

263. TANYTARSUS OGILBYI, sp.n.

♀.—Length of antennæ.....	0·015 inch	...	0·38 millimètre.
Expanse of wings.....	0·075 × 0·020	...	1·89 × 0·50
Size of body.....	0·055 × 0·015	...	1·39 × 0·38

Antennæ brownish-ochreous. Head, clypeus and palpi brownish-ochreous. Thorax yellowish-brown, levigate, with three longitudinal rows of hairs; intermediate one terminating about middle; pleuræ and pectus yellowish-brown; scutellum yellow; metanotum brownish-ochreous. Halteres pale prasinous, the stem ochreous. Abdomen about twice the length of thorax, prasinous, with a pale yellow pubescence; lamellæ of ovipositor ochreous. Legs

ochreous. Tibial spurs deep brown. In fore legs metatarsus more than twice the length of tibia. Wings longer than entire body, hyaline, with a brassy reflection; veins yellow. Costal and third longitudinal veins meeting considerably before apex of wing; auxiliary vein extremely indistinct, joining costa about mid-way between middle cross-vein and tip of first longitudinal vein; tip of latter situated considerably nearer to tip of costa than to middle cross-vein; latter very little oblique appearing as portion of third longitudinal vein; second longitudinal vein wanting; fourth longitudinal vein very indistinct beyond cross-vein, almost straight, nearly reaching wing-margin, its tip situated nearer to tip of third longitudinal than to that of anterior branch of fifth longitudinal fork; base of latter lying considerably beyond middle cross-vein, its posterior branch $\frac{1}{2}$ the length of anterior.

Hab.—Sydney (Mr. J. Douglas Ogilby). April.

264. TANYTARSUS MODICUS, sp.n.

♀.—Length of antennæ.....	0·012 inch	...	0·30 millimètre.
Expanse of wings.....	0·057 × 0·015	...	1·44 × 0·38
Size of body.....	0·065 × 0·012	...	1·66 × 0·30

Antennæ light brown. Head and clypeus brown. Palpi brownish-ochreous. Thorax yellow, with three distinct brown stripes, lateral ones cuneate, anterior one with a median yellow line; two longitudinal rows of brown or brownish hairs; pleuræ yellow; pectus brownish; scutellum yellow, fringed with brown hairs; metanotum brown. Halteres yellow. Abdomen about twice the length of thorax, pale yellowish-brown, clothed with a yellowish pubescence; lamellæ of ovipositor pale yellowish-brown. Legs brownish-ochreous. Tibial spurs deep brown. In fore legs metatarsus twice length of tibia. Wings nearly length of entire body, pellucid, almost hyaline, with roseous and brassy reflections; very long hairs on posterior margin; veins brownish. Costal and third longitudinal veins meeting very much before apex of wing and opposite tip of anterior branch of fifth longitudinal fork; auxiliary vein most indistinct, apparently joining costa a

short distance beyond middle cross-vein; first longitudinal vein reaching costa opposite middle of anterior branch of fifth longitudinal fork; basal portion of fourth longitudinal, middle cross-vein, and third longitudinal appearing as one perfectly straight distinct vein; fourth longitudinal vein extremely pale beyond middle cross-vein, almost reaching wing-margin, terminating opposite apex, and mid-way between tip of costal and that of anterior branch of fifth longitudinal fork; base of latter lying somewhat beyond middle cross-vein, its posterior branch about $\frac{1}{2}$ the length of anterior.

Hab.—Berowra, Hawkesbury district, N.S.W. (Skuse). August.

Genus 5. METRIOCNEMUS, v.d. Wulp.

Metriocnemus, v.d. Wulp, Tijds. Entom. 1873-74, XVII. p. 136.

Antennæ 2- + 12-jointed in ♂, 2- + 5-jointed in ♀. Thorax not ending in a point anteriorly. Wings haired. Third longitudinal vein terminating at end of anterior margin. Posterior branch of fifth longitudinal fork straight, or only very slightly bent downwards. Feet slender. Tibiæ not broadened. In fore-legs metatarsus shorter than tibia.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE							
		Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
55	<i>Met. nitidulus</i> ...	...	...	69	31	...	...	...	...	59	12	20	9

265. *METRIOCNEMUS NITIDULUS*, sp.n. (Pl. xii., fig. 23).

♀.—Length of antennæ.....	0·012 inch	...	0·30 millimètre.
Expanse of wings.....	0·045 × 0·015	...	1·13 × 0·38
Size of body.....	0·060 × 0·013	...	1·54 × 0·32

Antennæ, head and palpi ochreous. Thorax pale ochreous-brown or almost pale fulvous, levigate, with two longitudinal double rows of short yellowish hairs; pleuræ and pectus ochreous or pale brownish-ochreous; scutellum pale ochreous; metanotum greyish-ochreous. Halteres ochreous-yellow. Abdomen about twice the length of thorax, pale faded brown, generally paler between segments, clothed with short yellowish hairs; lamellæ of ovipositor short. Legs slender, ochreous or pale brownish-ochreous. Tibial spurs deep brown. In fore legs tibia $\frac{1}{4}$ longer than metatarsus. Wings longer than abdomen, sparingly haired, pellucid, almost hyaline with a brassy reflection; veins brownish-yellow. Costal extending beyond tip of third longitudinal more than half way to tip of fourth longitudinal; auxiliary vein very indistinct, reaching costa opposite base of fifth longitudinal fork; first longitudinal vein joining costa much nearer to middle cross-vein than to tip of third longitudinal; second longitudinal very indistinct, reaching costa opposite middle of anterior branch of fifth longitudinal fork; middle cross-vein and fourth longitudinal pale; latter not reaching wing-margin, its tip nearer to tip of costal than to that of anterior branch of fifth longitudinal fork; base of latter lying much beyond middle cross-vein, both branches not reaching margin, posterior one more than $\frac{1}{2}$ the length of anterior.

Hab.—Sydney (Skuse). January.

Section II. TANYPINA.

Head small, transverse above, rounded in front, situated deep in thorax. Eyes large, reniform, separate in both sexes. Ocelli

wanting. Palpi four-jointed, prominent, incurved, sub-cylindrical, first joint shortest, second joint shorter than third, fourth longest. Antennæ porrected, diverging a little sideways, filiform, seated in a notch in the eyes, 2- + 13-jointed in both sexes, or 2- + 13-jointed in ♂, and 2- + 10-jointed in ♀; first joint of scapus large and globose, second combined with flagellum, small, cupuliform; in ♂ the next following eleven flagellar joints sub-globose, gradually diminishing in size, twelfth flagellar joint longer than all others, all plumose, terminal joint short, elongate-conic, pubescent; in ♀, first three or four flagellar joints sub-globose, remainder gradually becoming more elongate or obovate, all verticillate-pilose, terminal joint equal in length to two of preceding, sub-lanceolate, pubescent. Mouth not prolonged. Thorax ovate, highly arched; scutellum nearly as wide as thorax, lunate: metanotum gibbose. Halteres small. Abdomen long, slender, seven-segmented, with a wide anal joint and hooked forceps, shorter and stouter in ♀. Legs slender, moderately long, pubescent, anterior sometimes the longest; fore legs remote from the others; coxæ moderate; femora rather stout; tibiæ longer, with minute spurs; in ♂ fore tarsi sometimes pilose, in ♀ with a minute pubescence; unguis minute, acute. Wings narrow, elongate, lanceolate, well rounded at base, pubescent or naked, ciliated; deflexed in repose. Costal vein reaching about apex of wing; humeral cross-vein present; auxiliary vein disappearing close to costa, beyond half the length of wing; sub-costal cross-vein wanting; first longitudinal vein bent upwards, joining costa at about two-thirds the length of wing; marginal cross-vein very obliquely situated; second longitudinal bent slightly upwards, joining costa at about $\frac{1}{3}$ the distance from tip of first to that of third longitudinal vein; third longitudinal vein very arcuated towards its tip, much bent downwards, ending a little before apex of wing; fourth longitudinal vein curved a little downwards towards tip, joining margin some distance below apex of wing; fork of fifth longitudinal vein with its base lying at or beyond base of posterior cross-vein; wing-fold running close to fifth longitudinal vein for whole of its length.

Genus 7. TANYPUS, Meig.

Tanypus, Meigen, Illiger's Mag. II. p. 261, 1803; Latreille, Gen. Cr. et Ins. IV. p. 247, 1809; Fries, Mon. Tanyp. Suec. 1823; Macquart, S. à B. I. p. 60, 1834; Curtis, Brit. Ent. XI. p. 501, 1834; Zetterstedt, D.Sc. IX. 1850; Walker, I.B. III. p. 196, 1856; Schiner, F.A. Dipt. 1864.

Antennæ 2- + 13-jointed. Wings pubescent. Marginal cross-vein and second longitudinal vein most distinct. Fork of fifth longitudinal vein with its base at base of posterior cross-vein.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE							
		Of the metatarsal joint in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsal joint in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
266	<i>Tan. Mastersi</i> ...	...	...	67	33	...	...	...	...	70	10	17	3

266. TANYPUS MASTERSI, sp.n. (Pl. XII., fig. 24).

♀.—Length of antennæ..... 0·030 inch ... 0·76 millimètre.
 Expanse of wings..... 0·125 × 0·033 ... 3·16 × 0·84
 Size of body..... 0·100 × 0·030 ... 2·54 × 0·76

Antennæ brown, with yellow verticils; first joint of scapus castaneous. Head, front, and clypeus castaneous. Palpi sordid ochre-yellow, densely pubescent. Eyes deep green. Thorax dull ochreous-brown, with a few scattered yellow hairs and three moderately broad deep brown longitudinal stripes, all reaching scutellum, intermediate stripe starting about $\frac{1}{3}$ of its length from anterior

margin, lateral ones commencing a little above middle of thorax ; pleuræ, pectus, and metanotum castaneous, the latter with an ochreous or ochreous-brown median line ; scutellum dull ochreous-brown, fringed with yellow hairs. Halteres sordid ochreous. Abdomen not twice the length of thorax, umbrous-brown, superior segments more or less tinged with castaneous, moderately clothed with yellow hairs. Legs ochre-yellow, coxæ and femora more or less tinged with brown, all joints slightly tipped with brown at apex and densely covered with a yellow pubescence. In fore legs tibia longer (?) than metatarsus. Wings longer than entire body, densely haired, hyaline, slightly tinted with brown in vicinity of cross-veins, veins pale ochreous-yellow ; pubescence mostly pale yellow, but somewhat sooty across wing at cross-veins, and again less distinctly at apex of the wing. Costal vein extending beyond tip of third longitudinal vein $\frac{1}{4}$ the distance from that to tip of fourth longitudinal vein ; auxiliary vein very indistinct towards tip, scarcely reaching costa, terminating about mid-way between origin of second longitudinal vein and tip of first longitudinal ; first, second, and third longitudinal veins running parallel and at equal distances apart ; tip of second longitudinal rather more than $\frac{1}{3}$ the distance from tip of first longitudinal to that of third longitudinal ; marginal cross-vein joining first longitudinal very close to tip ; middle and posterior cross-veins forming a very obtuse angle ; fourth and fifth longitudinal veins very pale and indistinct beyond cross-veins.

Hab.—Lawson, Blue Mountains (Masters). January.

Obs.—The above is drawn from a single specimen not in the best condition, but the species is a well-marked one, and will, I think, be recognised without difficulty.

Genus 8. ISOPLASTUS, gen.nov.

Antennæ in ♂ 2-+13-jointed, in ♀ 2-+10-jointed. Wings pubescent. Marginal cross-vein and second longitudinal vein pale and indistinct. Fork of fifth longitudinal vein with its base at base of posterior cross-vein.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE							
		Of the second tarsal joint in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
267	<i>Isop. notabilis</i> ...	65	35	66	34	68	10	15	7	63	12	19	6
268	<i>Isop. levidensis</i> ...	66	34	...	...	60	8(?)	24(?)	8	...	...	...	...
269	<i>Isop. formulosus</i> ...	67	33	67	33	68	8	14	10	67	7	21	5

267. ISOPLASTUS NOTABILIS, sp.n. (Pl. XII., fig. 25).

♂.—Length of antennæ..... 0·050 inch ... 1·27 millimètres.

Expanse of wings..... 0·095 × 0·025 ... 2·39 × 0·62

Size of body..... 0·140 × 0·025 ... 3·55 × 0·62

♀.—Length of antennæ..... 0·025 inch ... 0·62 millimètre.

Expanse of wings..... 0·095 × 0·030 ... 2·39 × 0·76

Size of body..... 0·085 × 0·025 ... 2·14 × 0·62

♂ and ♀.—Antennæ of the ♂ whitish or with first joint of scapus black, with whitish or yellowish plumes; of the ♀ entirely yellowish. Head brown or black, with a sparse yellowish pubescence. Clypeus and palpi brown or ochreous-brown, with a dense yellowish pubescence. Thorax brown, opaque, more or less hoary, with three longitudinal, parallel, generally indistinct, brown lines beset with pale yellow hairs, intermediate line terminating at apex of an ovate depression situated in front of scutellum, lateral ones reaching scutellum; pleuræ brown; scutellum brown, or ochreous-brown, fringed with pale yellow hairs; metanotum generally

dark brown. Halteres white. Abdomen in ♂ very slender, three times the length of thorax, whitish, with pale yellow hairs, third to sixth segments more or less distinctly streaked or spotted with brown, sixth and seventh often entirely brown; anal joint and forceps yellowish or whitish; in ♀ nearly the breadth but not twice the length of thorax; uniformly brown, clothed with short pale yellow hairs. Legs whitish or pale yellowish, numerously ringed with brown. In fore legs tibia $\frac{1}{5}$ longer than metatarsus. Wings covered with short white or pale yellow hairs, limpid, with numerous small brownish spots. Costal and third longitudinal veins meeting much before apex of wing; auxiliary vein indistinct, reaching costa about mid-way between middle cross-vein and tip of first longitudinal; first longitudinal vein reaching costa in ♂ mid-way between middle cross-vein and tip of third longitudinal, in ♀ nearer middle cross-vein; marginal cross-vein almost parallel with costa; second longitudinal reaching costa in ♂ at a point $\frac{2}{5}$ the distance from tip of first to that of third longitudinal vein, more than $\frac{2}{5}$ in ♀; fourth and fifth longitudinal veins pale beyond cross-veins; posterior cross-vein situated before middle cross-vein, in ♂ a distance rather greater than its length, in ♀ somewhat less.

Hab.—Nepean River, near Penrith, Blue Mts., and Sydney, N.S.W. (Skuse). October. Not common.

268. *ISOPLASTUS LEVIDENSIS*, sp.n.

♂.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings.....	0·080 × 0·020	...	2·02 × 0·50
Size of body.....	0·110 × 0·020	...	2·79 × 0·50

Antennæ yellowish-grey; first joint of scapus light brown. Head, front and clypeus light brown. Palpi somewhat sordid ochreous. Thorax light ochreous-brown, opaque, somewhat pruinose, with three longitudinal, parallel rows of yellow hairs, lateral ones along a distinct pruinose line, beginning just below humeri; pleuræ, pectus, scutellum and metanotum light brown. Halteres

pallid. Abdomen nearly three times the length of thorax, very pale ochreous-yellow, each segment with a broad ill-defined band of brown, clothed with yellow hairs; anal joint very pale ochreous-yellow, forceps brown. Legs very pale ochreous-yellow, densely covered with pale hairs. In fore legs tibia a little longer than metatarsus. Wings about the length of abdomen, pellucid, almost hyaline, densely haired, veins pale ochreous-yellow. Costal meeting third longitudinal vein much before apex of wing; latter vein running parallel with first longitudinal; auxiliary vein terminating about mid-way between origin of third and tip of first longitudinal vein; second longitudinal and marginal cross-vein extremely indistinct,* close to first longitudinal; middle and posterior cross-veins equal in length, latter situated somewhat before former; fourth and fifth longitudinal veins pale and indistinct past cross-veins.

Hab.—Wheeny Creek, Hawkesbury District, N.S.W. (Skuse). January.

Obs.—I have seen only a single specimen.

269. *ISOPLASTUS FORMULOSUS*, sp.n. (Pl. XII., fig. 26).

♂.—Length of antennæ.....	0·040 inch	...	1·01 millimètres.
Expanse of wings.....	0·080 × 0·020	...	2·02 × 0·50
Size of body.....	0·100 × 0·017	...	2·54 × 0·42
♀.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·080 × 0·025	...	2·02 × 0·62
Size of body.....	0·060 × 0·017	...	1·54 × 0·42

♂ and ♀.—Antennæ pale ochre-yellow, with pale yellow verticils. Head, clypeus and palpi brown or ochreous-brown, with yellow hairs. Thorax ochreous or light umber-brown, dull, traversed for its whole length by three longitudinal, parallel rows of rather long yellow hairs; pleuræ and pectus brown; scutellum ochreous or ochreous-brown, fringed with pale yellow hairs;

* In this and the following species these two veins are so indistinct that they might be regarded as absent, and what are taken to be indications of them may result from wing-folds or even from the pubescence of the wing.

metanotum brown. Halteres pale yellow or whitish. Abdomen in ♂ three times the length of thorax, yellow or whitish, each segment banded anteriorly with brown and covered with long pale yellow hairs; anal joint and forceps generally ochreous-yellow; in ♀ not twice the length of abdomen, brown, rather densely covered with pale yellow hairs. Legs pale ochre-yellow, densely haired. In fore legs tibia $\frac{1}{8}$ longer than metatarsus. Wings in ♂ as long as, or a little longer than, abdomen, in ♀ a little longer than the whole body, pellucid, almost hyaline, densely haired, with yellowish veins; pubescence pale, with six small more or less indistinct brownish patches;* three equidistant ones on anterior border, last (just before tip of second longitudinal vein) squarish and most distinct of all; three indistinct ones on posterior border, one at tip of each branch of fifth longitudinal fork, and third mid-way between tip of posterior branch and anal angle. Costal vein extending a little beyond tip of third longitudinal vein, but terminating far from apex of wing; auxiliary vein very indistinct, apparently terminating near costa a short distance beyond middle cross-vein; first longitudinal vein reaching costa in ♂ somewhat beyond, in ♀ at a point mid-way between middle cross-vein and tip of costa; marginal cross-vein and second longitudinal vein exceedingly indistinct, latter reaching costa at a point about $\frac{1}{3}$ (?) the distance from tip of first longitudinal vein to that of third longitudinal; posterior cross-vein situated before middle cross-vein a distance equal to its length; fourth and fifth longitudinal veins very pale and indistinct.

Hab.—Berowra (Masters and Skuse).

Genus 9. PROCLADIUS, gen.nov.

Antennæ in ♂ 2- + 13-jointed. Wings naked. Marginal cross-vein and second longitudinal vein distinct. Fork of fifth longitudinal vein short, its base lying mid-way between posterior cross-vein and tip of its posterior branch.

* More distinct when the wing is viewed at a certain obliquity.

INDICES OF ALAR AND TARSAL PROPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE							
		Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	Of the metatarsus in the hind feet.	Of the second tarsal joint in the hind feet.	From A to B.	From B to C.	From C to D.	From D to E.	From A to B.	From B to C.	From C to D.	From D to E.
		♂	♂	♀	♀	♂	♂	♂	♂	♀	♀	♀	♀
270	<i>Proc. paludicola</i> ...	64	36	...	...	67	12	15	6	...	...	...	...
271	<i>Proc. pictipennis</i>...	?	?	...	...	62	13	19	6	...	...	...	...

270. PROCLADIUS PALUDICOLA, sp.n. (Pl. XII., fig. 27).

♂.—Length of antennæ..... 0·040 inch ... 1·01 millimètres.

Expanse of wings..... 0·080 × 0·020 ... 2·02 × 0·50

Size of body..... 0·125 × 0·020 ... 2·79 × 0·50

Antennæ mouse-coloured, large basal joint black. Head black, more or less tinged with ochreous; clypeus and palpi brown or ochreous-brown, with yellow hairs. Thorax black, opaque, more or less hoary in a certain light, with an ochreous spot at the humeri; traversed from anterior border to scutellum by three longitudinal and parallel rows of short yellow hairs; pleuræ, pectus, scutellum, and metanotum black. Halteres white. Abdomen about $2\frac{1}{2}$ times length of thorax, brownish-black, posterior border of each segment lighter, rather densely clothed with yellow hairs; anal joint and forceps wider than preceding segment, brownish-black. Coxæ and femora deep brown or black. Tibiæ and metatarsi ochreous, former distinctly ringed with deep brown or black at apex; four remaining joints of tarsi pitch-brown. In fore legs tibia $\frac{1}{3}$ longer than metatarsus. Wings about length of

abdomen, pellucid, almost hyaline, with a few minute hairs about tip; veins brown. Costal vein extending beyond tip of third longitudinal about $\frac{1}{3}$ the distance from that to tip of fourth longitudinal vein; auxiliary vein directed towards costa, disappearing somewhat beyond the middle of wing; second longitudinal vein bent upwards, pale, running very close to third longitudinal as far as marginal cross-vein; third longitudinal vein straight, bent slightly downwards towards tip; middle cross-vein very thick, in line with posterior cross-vein; latter slender; fourth longitudinal vein very pale for whole of its length.

Hab.—Hexham Swamps, near Newcastle, N.S.W. (Skuse).
April.

271. *PROCLADIUS PICTIPENNIS*, sp.n. (Pl. XII., fig. 28).

♂.—Length of antennæ..... — inch ... — millimètre.

Expanse of wings..... 0.055×0.017 ... 1.39×0.42

Size of body..... 0.070×0.017 ... 1.77×0.42

Antennæ brownish (portion lost); first joint of the scapus black. Head very pale ochreous or whitish. Clypeus and palpi pale brownish. Thorax dark brown or black, pruinose, with a very pale ochreous or whitish spot at humeri; three longitudinal and parallel rows of very short yellow hairs; pleuræ and pectus dark brown, the former with a patch of very pale ochreous or whitish; scutellum testaceous-brown; metanotum dark brown or black. Halteres white, stem yellowish. Abdomen about $2\frac{1}{2}$ times the length of thorax, brown, lighter between segments, rather sparingly clothed with brownish-yellow hairs; anal joint and forceps wider than preceding segment, dark brown, posterior border whitish. Coxæ brown; trochanters ochre-yellow. Femora brown, ochre-yellow at extreme base. Fore tibiæ yellowish-brown, intermediate and hind tibiæ whitish, all dark brown at base and apex. Tarsi (two hind pairs lost) yellowish-brown, end joints darker. In fore legs tibiæ $\frac{1}{3}$ longer than metatarsus. Wings length of abdomen, pellucid, almost hyaline, with three indistinct

brownish markings ; darkest spot enveloping middle cross-vein ; a pale one on posterior margin opposite to last ; and a pale fascia starting from anterior margin, filling space between tips of first and second longitudinal veins, and scarcely reaching as far as anterior branch of fifth longitudinal. Veins yellowish-brown. Auxiliary vein directed towards costa, disappearing opposite base of fork of fifth longitudinal ; costal vein extending beyond tip of third longitudinal $\frac{1}{4}$ the distance from that to tip of fourth longitudinal ; second longitudinal bent upwards, pale, running very close to third longitudinal as far as marginal cross-vein ; third longitudinal bent a little downwards towards tip ; middle cross-vein thick, somewhat indistinct, situated a little in advance of posterior cross-vein ; latter slender ; fourth longitudinal very pale.

Hab.—Lawson, Blue Mountains, N.S.W. (Masters). January.

Obs.—Very like the last, but distinguished from it particularly by the wing-markings and pale patch on the pleuræ.

Section III. CERATOPOGONINA.

Head small, generally depressed in front, prolonged into a very short rostrum. Eyes lunate, almost reniform. Ocelli wanting. Proboscis more or less porrect. Labrum seated on the upper base of labium, horny, pointed, flat, about the length of labium, sometimes only two-thirds its length. Mandibles seated on the under base of labium, horny, sub-falcate, acuminate, toothed, usually the length of labrum. Palpi originating on both sides of base of labium, 4-jointed ; first joint cylindrical, second generally longer, cylindrical, conical, oval, clavate or orbicular ; third and fourth cylindrical or oval, shorter than second, the fourth longer than second, or both longer. Antennæ porrect, filiform, with a varying number of joints, usually 2-+12-jointed, longer than the head, sometimes almost the length of entire body ; first joint of scapus large, globose or disciform ; second joint of scapus and first seven flagellar joints globose, or ovate to oblong-ovate, sessile

or pedicelled ; eighth to twelfth flagellar joints generally more or less elongate, oval, elliptical or cylindrical, beset with short hairs, and at base verticillate-pilose ; in ♂ second joint of scapus and following seven flagellar joints usually bearing a thick brush or plume of hairs. Thorax arched, almost oval, flattened in front of scutellum ; scutellum small, semicircular ; metathorax very short. Halteres short, naked. Abdomen with eight segments, cylindrical or flattened, sometimes narrowing at base ; in ♂ terminating in a short forceps. Legs of about equal length, approximate at the base ; femora sometimes incrassated, sometimes spinulose beneath ; tibiæ sometimes incrassated ; tarsal joints varying in length ; unguis variable. Wings usually lanceolate or oval, haired or naked in both sexes, sometimes naked or partly haired in ♂ and entirely or partly haired in ♀ ; incumbent in repose. Seven longitudinal veins. Third longitudinal when present usually extremely rudimentary and indistinct ; third and fourth usually forked, fifth always forked. Marginal and middle cross-veins normally present. Auxiliary vein usually pale and indistinct. Costal terminating before, at, or beyond the middle of the anterior border, not reaching the apex of the wing. First longitudinal vein joining before the end of costa, distinct. Second longitudinal usually originating from first longitudinal beyond its middle (in *Leptoconops* from base of wing), distinct, usually united to first longitudinal by marginal cross-vein. Third longitudinal vein generally very indistinct, often entirely absent, usually appearing as a faint detached fork (in *Leptoconops* simple, arising from base of wing). Fourth longitudinal originating from fifth longitudinal not far from base, pale, very pale at its origin, with rare exceptions joined to base (or a little beyond it) of second longitudinal by middle cross-vein, anterior branch reaching margin above, at, or below apex of wing, posterior branch originating somewhat before, at, or a little beyond the middle cross-vein, sometimes detached, rarely entirely wanting. Fifth longitudinal with a short or moderate fork, pale, its posterior branch reaching margin before, opposite, or beyond end of second longitudinal.

Genus 10. *LEPTOCONOPS*, gen.nov.

Antennæ in ♀ 2-+11-jointed; first joint of scapus large, disciform; second smaller, globose; flagellar joints globose, gradually diminishing in size, more ovate towards apex, terminal joint elongate-ovate. Proboscis prominent. Palpi 4-jointed; first and second joints small, third greatly incrassated, about three times the length of first or second; fourth not as long as last, slender, cylindrical. Wings naked. All longitudinal veins taking their origin at the base of the wing. Marginal cross-vein present. Middle cross-vein wanting. Fourth and fifth longitudinal veins only forked.

272. *LEPTOCONOPS STYGIUS*, sp.n. (Pl. XIII., fig. 29).

♀.—Length of antennæ.....	0.017 inch	...	0.42 millimètre.
Expanse of wings	0.050 × 0.020	...	1.27 × 0.50
Size of body.....	0.065 × 0.017	...	1.66 × 0.42

Entirely black. Joints of the antennæ with dense light greyish verticils. Head and thorax levigate, with minute black hairs. Abdomen about twice the length of thorax, opaque, with some minute black hairs; lamellæ very long, slender. Legs slender. Hind metatarsus $\frac{1}{3}$ longer than second tarsal joint. In fore legs tibia rather more than twice the length of metatarsus. Wings hyaline, rather weakly iridescent; costal and first two longitudinal veins greyish-brownish, the rest pale and indistinct. Auxiliary vein not distinguishable, apparently wanting; first and second longitudinal veins reaching costa before middle of anterior border, confluent at tips, tip of second longitudinal almost opposite, but immediately beyond tip of posterior branch of fifth longitudinal vein; marginal cross-vein indistinct; marginal cell small; third longitudinal vein arcuated, not quite reaching the margin, terminating a little above the apex of the wing; fourth longitudinal bellied downwards at middle, reaching margin a little below apex of wing, the posterior branch detached; fork of fifth longitudinal wide, the anterior branch twice the length of the posterior.

Hab.—Woronora (Skuse). October.

Genus 11. CERATOPOGON, Meig.

Ceratopogon, Meig., Ill. Mag. II. p. 261, 1803 ; Syst. Besch. I. p. 68, 1818 ; Latreille, Crust. et Ins. IV. p. 250, 1809 ; Curtis, Brit. Ent. VI. p. 285, 1829 ; Macquart, S. à B. I. p. 63, 1834 ; Zetterstedt, D.Sc. ; Winnertz, Linn. Entom. VI. p. 3, 1852 ; Walker, Ins. Brit. Dipt. III. p. 205, 1856.

Antennæ 2-+12-jointed, second joint of scapus and seven following flagellar joints small, globose or ovate, adorned in ♂ with long hairs forming a thick brush or plume, last five joints ovate, elongate or cylindrical. Proboscis more or less prominent. Palpi 4-jointed ; first joint small, second usually longer, cylindrical, conical or oval, third and fourth joints cylindrical or ovate, shorter or longer than second joint. Wings hairy or naked. Marginal cross-vein present or wanting. Third longitudinal wanting or extremely rudimentary, indistinct. Fourth and fifth longitudinal veins forked, the fork of the latter short.

Winnertz's distribution of the species tabulated in his monograph of *Ceratopogon* is substantially set forth in the following translation ; the venation and cells in the wings being, however, subject to an entirely different interpretation and nomenclature :—

FIRST DIVISION.

MARGINAL CROSS-VEIN PRESENT.

A. Wings wholly or partially hairy, those of males of some species entirely naked. All femora simple, unarmed.

a. Ungues with hairy pulvilli. Ungues of equal length in both sexes.

1. In hind feet metatarsus shorter than second tarsal joint, or both of equal length. *Forcipomyia*, Meg.; *Labidomyia*, Steph.

Second longitudinal vein joining costa :

* In middle of anterior border, or before it.

** Between middle of anterior border and apex of wing.

2. In hind feet metatarsus longer than second tarsal joint.

Second longitudinal vein joining costa :

* In middle of anterior border, or before it.

** Between middle of anterior border and apex of wing.

b. Ungues with bristly hairs instead of pulvilli. Ungues of equal length in both sexes.

In hind feet metatarsus longer than second tarsal joint.

Second longitudinal vein joining costa :

* In middle of anterior border, or before it.

** Between middle of anterior border and apex of wing.

Culicoides, Latr.

c. Ungues without pulvilli or bristly hairs. One of the unguis longer than the other (in ♀ only?).

In hind feet metatarsus longer than second tarsal joint.

Second longitudinal vein joining costa between middle of anterior border and apex of wing.

B. Wings entirely naked. Second longitudinal vein joining costa between middle of anterior border and apex of wing.

a. All femora unarmed.

1. Ungues not denticulated.

* Ungues of equal length in both sexes.

** Ungues equally long, with a side-claw standing outwards in ♀.

*** In ♀ one claw longer than the other.

2. Ungues (in the ♀ only?) with a tooth on inner side.
Ungues of equal length.

b. Some or all the femora spinose beneath. *Palpomyia*, Meg.

1. Ungues not denticulated.

a. Ungues of equal length in both sexes.

* Plantæ hairy.

** Plantæ spinulose.

β. One of the unguis longer than the other in ♀.
Plantæ hairy.

2. Ungues (in ♀ only ?) with a tooth on inner side.

a. Ungues of equal length in both sexes.

* Plantæ hairy.

** Plantæ spinulose. *Sphæromias*, Steph.; Curt.

c. Hind femora incrassated, spinose beneath.

Ungues not denticulated.

One of the unguis longer than the other in ♀. *Serromyia*, Meg.; *Prionomyia*, Steph.

SECOND DIVISION.

MARGINAL CROSS-VEIN WANTING.

Wings naked. Second longitudinal vein joining costa between middle of anterior border and apex of wing.

A. All the femora unarmed.

1. Ungues not denticulated.

2. Ungues with a tooth on inner side.

3. Ungues with a side-claw standing outwards. Plantæ spinulose.

B. Some or all femora spinose beneath.

1. Ungues not denticulated.

2. Ungues with a tooth on inner side in ♀.

INDICES OF ANTENNAL, ALAR, AND TARSAL POPORTIONS.

No.	SPECIES.	RELATIVE LENGTH				RELATIVE DISTANCE						RELATIVE LENGTH	
		Of the metatarsus in the hind foot.	Of the second tarsal joint in the hind foot.	Of the metatarsus in the hind foot.	Of the second tarsal joint in the hind foot.	From A to B.	From B to C.	From C to E.	From A to B.	From B to C.	From C to E.	Of the second joint of scapus and first seven joints of flagellum.	Of the five last joints of the antennae.
		♂	♂	♀	♀	♂	♂	♂	♀	♀	♀	♀	♀
273	<i>C. albopunctatus</i> ...	48	52	50	50	44	4	52	42	5	53	60	40
274	<i>C. æqualis</i>	50	50	...	...	43	6	51	...	...	...	...	...
275	<i>C. saltivagus</i> ... ..	...	...	67	33	...	...	...	40	8	52	53	47
276	<i>C. rhynchops</i> ... ..	...	...	72	28	...	...	...	54	24	22	29	71
277	<i>C. Mastersi</i>	74	26	75	25	53	16	31	52	24	24	33	67
278	<i>C. insignis</i> ... ..	...	...	69	31	...	...	...	41	14	45	40	60
279	<i>C. subnitidus</i> ... ..	...	...	67	33	...	...	...	39	10	51	63	37
280	<i>C. minusculus</i>	66	34	...	...	40	3	57	...	...	...	...	...
281	<i>C. nigellus</i> ... ..	...	...	69	31	...	...	...	44	6	50	52	48
282	<i>C. decempunctatus</i> ... ..	...	...	68	32	...	...	...	44	12	44	44	56
283	<i>C. Sydneyensis</i>	70	30	70	30	47	6	47	43	14	43	48	52
284	<i>C. æratipennis</i>	72	28	71	29	40	12	48	47	6	47	53	47
285	<i>C. marmoratus</i> ... ..	...	...	70	30	...	...	...	60	6	34	45	55
286	<i>C. molestus</i> ... ..	...	...	69	31	...	...	...	59	11	30	53	47
287	<i>C. tigrinus</i> ... ..	...	...	66	34	...	...	...	55	18	27	47	53
288	<i>C. imperfectus</i> ... ..	...	...	66	34	...	...	...	50	25	25	?	?
289	<i>C. latipennis</i> ... ..	...	...	75	25	...	...	...	47	11	42	50	50

I. MARGINAL CROSS-VEIN PRESENT.

A. Wings wholly or partly haired, those of ♂ in some species entirely naked. All femora simple, unarmed.

a. Ungues with hairy pulvilli, of equal length in both sexes.

1. In hind feet metatarsus shorter than, or equal in length to, second tarsal joint.

* *Second longitudinal vein joining costa at or before middle of anterior border.*

273. CERATOPOGON ALBOPUNCTATUS, sp.n. (Pl. XIII., fig. 30).

♂.—Length of antennæ.....	0.025 inch	...	0.62 millimètre.
Expanse of wings.....	0.047 × 0.015	...	1.18 × 0.38
Size of body.....	0.065 × 0.018	...	1.66 × 0.45
♀.—Length of antennæ.....	0.023 inch	...	0.58 millimètre
Expanse of wings.....	0.050 × 0.022	..	1.27 × 0.55
Size of body.....	0.060 × 0.020	...	1.54 × 0.50

♂ and ♀.—Antennæ yellowish-brown, plumes with golden reflections. Head brown, with whitish or pale yellowish pubescence. Palpi brownish. Thorax brown, with whitish or pale yellowish pubescence, pleuræ and pectus brown, slightly yellow below origin of wings; scutellum and metanotum brown. Halteres white with ochreous stem. Abdomen about three times the length of thorax, brown, paler between segments, clothed with brownish hairs; anal joint and forceps brown. Legs brownish-ochreous or pale brownish. In fore legs tibia about three times length of metatarsus. Wings about the length of abdomen, hyaline, covered with yellowish hairs, more brownish along anterior margin, with a marginal white spot at tip of second longitudinal; veins brownish. Auxiliary vein indistinct towards its tip, terminating close to tip of first longitudinal; first and second longitudinal veins in ♂ both reaching costa before base of fifth longitudinal fork, in ♀ second longitudinal reaching costa opposite or somewhat beyond; inner marginal cell obliterated by confluence of veins; trace of third longitudinal present; fork of fourth longitudinal very pale with a short petiole, branches slightly divergent, the tip of anterior one somewhat nearer apex of wing than that of posterior; anterior branch of fifth longitudinal fork little arcuated.

Hab.—Sydney, Wheeney Creek, and Knapsack Gully, Blue Mountains, N.S.W. (Masters and Skuse), Common in December and January.

274. *CERATOPOGON ÆQUALIS*, sp.n. (Pl. XIII., fig. 31).

♂.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·060 × 0·017	...	1·54 × 0·42
Size of body.....	0·085 × 0·020	...	2·14 × 0·50

Antennæ brown, plumes with a pale reflection. Head black. Palpi ochreous-brown or fulvous. Thorax black or deep brown, opaque, covered with pale yellow or whitish hairs; pleuræ and pectus deep brown or black; scutellum brown or brownish-black; metanotum black. Halteres whitish, yellowish or pale ochreous. Abdomen about twice the length of thorax, deep brown, almost black, densely clothed with long brownish-yellow hairs. Legs ochreous-yellow, minutely darker at articulations. In fore legs tibia rather more than twice the length of metatarsus. Wings longer than abdomen, hyaline, densely covered with pale yellow hairs, with a more or less brassy reflection. Costal and first two longitudinal veins brownish. Auxiliary vein indistinct, apparently terminating in costa immediately before tip of first longitudinal; first and second longitudinal veins terminating near one another, reaching costa before base of fifth longitudinal fork; inner marginal cell obliterated by confluence of veins; very indistinct trace of fork of third longitudinal present; middle cross-vein and fourth longitudinal very pale, fork of latter with a short petiole, branches slight divergent, tip of anterior one reaching margin at a point nearer apex of wing than that of posterior branch; anterior branch of fifth longitudinal fork nearly straight, twice the length of posterior branch.

Hab.—Hexham Swamps, near Newcastle, N.S.W. (Skuse). April.

2. In hind feet metatarsus longer than second tarsal joint.

* *Second longitudinal vein joining costa at or before middle of anterior border.*

275. CERATOPOGON SALTIVAGUS, sp.n. (Pl. XIII., fig. 32).

♀.—Length of antennæ.....	0·017 inch	...	0·42 millimètre.
Expanse of wings.....	0·040 × 0·016	...	1·01 × 0·40
Size of body.....	0·040 × 0·015	...	1·01 × 0·38

Brown. Head, thorax and abdomen with pale yellow hair; latter about once and a half the length and rather narrower than thorax. Legs brownish-ochreous. In fore legs tibia twice the length of metatarsus. Wings the length of entire body, hyaline, richly iridescent, densely pubescent; costal and first two longitudinal veins yellowish; rest pale. Auxiliary vein very pale and indistinct; first and second longitudinal veins both reaching costa before middle of wing, tip of second longitudinal opposite base of fifth longitudinal fork; inner marginal cell obliterated by confluence of veins; extremely indistinct trace of rudimentary third longitudinal fork; fourth longitudinal fork with a short petiole, branches moderately divergent, anterior one joining margin a little above apex of wing, posterior one detached at its base, almost straight, its tip scarcely nearer to tip of anterior branch of fifth longitudinal fork than to that of anterior branch; both branches of fifth longitudinal nearly straight, anterior one not twice the length of posterior.

Hab.—Berowra, N.S.W. (Skuse).

*** Second longitudinal vein joining costa beyond middle of anterior border.*

276. CERATOPOGON RHYNCHOPS, Schiner (Pl. XIII., fig. 33).

C. rhynchops, Sch., Diptera der Novara Expedition, Zool. Theil, Bd. II. p. 26, 1868.

♀.—Length of antennæ.....	0·047 inch	...	1·18 millimètres.
Expanse of wings.....	0·070 × 0·025	...	1·77 × 0·62
Size of body.....	0·070 × 0·020	...	1·77 × 0·50

Bright rust-yellow; thorax nitidous. Abdomen dull, apex clubbed and rather densely haired. Head yellow. Eyes black, contiguous in front. Antennæ bright yellow at base, flagellar joints brownish. Proboscis almost the length of head. Palpi yellow. Legs uniformly pale yellow, tarsi scarcely darker towards their extremity. Wings almost hyaline, distinctly haired; veins exactly as with *Ceratopogon rostratus*, Wtz. (Linn. Entom. VI. p. 31, taf. iv. fig. 23b). $1\frac{1}{4}^m$.

Hab.—Sydney (Frauenfeld). Three specimens of ♀.

Obs.—I have a large series of specimens (strange to say all are of the ♀) of a species which is generally distributed in N.S.W., and which I take to be *C. rhynchops*, Sch. None, however, quite agree in the colouring mentioned in Schiner's description translated above; there appear to be four varieties amongst the specimens before me.

Var. β. Head black. Thorax, pleuræ, pectus, scutellum, and metanotum brown, sub-levigate. Abdomen brown, darker than thorax.

Hab.—Sydney, &c. (Masters and Skuse). Several specimens.

Var. γ. Head, thorax, pleuræ, pectus, scutellum, and metanotum black, sub-nitidous. Abdomen brown, also sub-nitidous.

Hab.—Sydney (Masters). One specimen.

Var. δ. Antennæ entirely dusky brown. Head, thorax, pleuræ, pectus, and metanotum black, levigate. Scutellum ochreous or ochreous-brown. Abdomen brown.

Hab.—Glenbrook, Blue Mountains (Masters). Several specimens.

Var. ε. Antennæ entirely dusky brown. Head, thorax, pectus, scutellum, and metanotum black, levigate or sub-nitidous. Abdomen deep brown.

Hab.—Berowra, Como, &c., N.S.W. (Masters and Skuse). Several specimens.

277. CERATOPOGON MASTERSI, sp.n. (Pl. XIII., fig. 34).

♂.—Length of antennæ.....	0·035 inch	...	0·88 millimètre.
Expanse of wings.....	0·065 × 0·018	...	1·66 × 0·45
Size of body.....	0·070 × 0·021	...	1·77 × 0·52
♀.—Length of antennæ.....	0·027 inch	...	0·68 millimètre.
Expanse of wings.....	0·065 × 0·025	...	1·66 × 0·62
Size of body.....	0·070 × 0·022	...	1·77 × 0·55

♂ and ♀.—Antennæ entirely black; ♂ plumes with a cupreous, reflection. Head, thorax, pleuræ, pectus and metanotum black or very deep brown, levigate; thorax with a sparse, short, yellowish pubescence; scutellum brown, fringed with long yellowish-brown hairs. Halteres yellowish or white, the stem more or less discoloured. Abdomen black, or very deep brown, rather dull, clothed with brownish hairs; in ♂ twice the length of thorax, with short, thick holding-forceps; in ♀ short and robust, lamellæ of ovipositor ochreous. Legs ochreous-brown with yellow or brownish-yellow hairs. In fore legs tibia $\frac{1}{3}$ longer than metatarsus. Wings about the length of entire body, pellucid, almost hyaline, with a faint brownish tint on anterior half, brilliantly iridescent, pubescent only about tip in ♂; veins brown; costal, first two longitudinal veins, middle cross-vein and basal half of fourth longitudinal very distinct. Auxiliary vein indistinct, terminating in costa a little before tip of first longitudinal vein; first longitudinal reaching costa at a point $\frac{1}{3}$ (rather more in ♂) distance from base of second longitudinal to tip of costa, and opposite tip of posterior branch of fifth longitudinal fork; marginal cross-vein very short; inner marginal cell very narrow; second longitudinal reaching tip of costa, in ♂ somewhat before, in ♀ opposite, tip of anterior branch of fifth longitudinal fork; indistinct fork of third longitudinal present; fork of fourth longitudinal pale, with a short petiole, anterior branch reaching margin, in ♂ at, in ♀ a little below apex of wing, posterior branch detached at its base, reaching wing-margin mid-way between tips of anterior branch and the

anterior branch of fifth longitudinal fork ; the latter arcuated at its tip, posterior branch in ♂ slightly arcuated, in ♀ straight, about $\frac{1}{2}$ the length of anterior.

Hab.—Knapsack Gully, Blue Mountains, N.S.W. (Masters and Skuse).

278. CERATOPOGON INSIGNIS, sp.n. (Pl. XIII, fig. 35).

♀.—Length of antennæ.....	0·017 inch	...	0·42 millimètre.
Expanse of wings.....	0·037 × 0·015	...	0·92 × 0·38
Size of body.....	0·035 × 0·011	...	0·88 × 0·27

Black ; antennæ brown, and legs light umber-brown. Head and thorax dull, with a brown pubescence. Halteres white. Abdomen short, robust, dull, rather densely covered with a brown pubescence. In fore legs tibia rather more than twice the length of metatarsus. Wings longer than the entire body, hyaline, densely covered with brownish-yellow pubescence, iridescent ; costal and first two longitudinal veins yellowish-brown. Auxiliary vein not distinguishable ; first longitudinal gradually running into costa somewhat before base of fifth longitudinal fork, and at a point about mid-way between base of second longitudinal vein and tip of costa ; second longitudinal reaching costa a little beyond middle of anterior border, and opposite tip of posterior branch of fifth longitudinal fork ; inner marginal cell extremely narrow, veins almost confluent ; fork of fourth longitudinal with a short petiole, anterior branch reaching margin at apex of wing, posterior one detached at its base, almost straight, joining about mid-way between tips of anterior branches of fourth and fifth forks ; anterior branch of latter not quite twice the length of posterior, not quite reaching margin, slightly arcuated, posterior branch straight.

Hab.—Narrabeen Lagoon, near Manly, N.S.W. (Skuse).

b. Ungues with bristly hair instead of pulvilli.

1. In hind feet metatarsus longer than second tarsal joint.

* *Second longitudinal vein joining costa at or before middle of anterior border.*

279. CERATOPOGON SUBNITIDUS, sp.n. (Pl. XIII., fig. 36).

♀.—Length of antennæ.....	0·015 inch	...	0·38 millimètre.
Expanse of wings.....	0·042 × 0·017	...	1·06 × 0·42
Size of body.....	0·050 × 0·015	...	1·27 × 0·38

Black, sub-nitidous ; pleuræ very deep brown ; legs brown, tarsi yellowish. Thorax with brownish hairs. Halteres brown or brownish. Abdomen short, robust, clothed with brown hairs ; lamellæ of ovipositor black. In fore legs tibia nearly twice the length of metatarsus. Wings about length of entire body, hyaline, with a rich brassy reflection, densely covered with a brownish pubescence ; costal, first two longitudinal veins, middle cross-vein, and basal portion of fourth longitudinal brownish. Auxiliary vein indistinguishable ; first longitudinal vein joining costa at a point somewhat more than mid-way between origin of second longitudinal vein and tip of costa ; second longitudinal reaching costa immediately before middle of anterior margin, and opposite base of fifth longitudinal fork ; inner marginal cell narrow ; very indistinct trace of third longitudinal fork ; fork of fourth longitudinal pale, with a short petiole, anterior branch nearly straight, reaching margin at apex of wing ; posterior branch reaching margin at a point somewhat nearer tip of anterior branch of fifth longitudinal fork ; both branches of latter nearly straight, anterior scarcely twice the length of posterior.

Hab.—Berowra, N.S.W. (Masters).

280. CERATOPOGON MINUSCULUS, sp.n. (Pl. XIII., fig. 37).

♂.—Length of antennæ.....	0·015 inch	...	0·38 millimètre.
Expanse of wings.....	0·035 × 0·011	...	0·88 × 0·27
Size of body.....	0·035 × 0·010	...	0·88 × 0·25

Black, opaque ; scutellum and club of halteres ochreous-yellow ; legs cinereous. Thorax glabrous. Abdomen about $\frac{1}{3}$ longer than thorax, somewhat brownish-black, apparently glabrous. In

fore legs tibia about twice the length of metatarsus. Wings the length of entire body, hyaline, with a pale, almost silvery, reflection, very sparingly pubescent near anterior border and apex, and a longitudinal line of extremely short hairs running mid-way between principal veins and along courses of branches of rudimentary third longitudinal fork; costal, first two longitudinal veins, middle cross-vein and basal portion of fourth longitudinal pale brownish. Auxiliary vein indistinct; first and second longitudinal veins reaching costa considerably before middle of wing, and before base of fifth longitudinal fork; both marginal cells obliterated by confluence of veins; fork of fourth longitudinal very pale, invisible at base, the anterior branch straight, joining margin immediately above apex of wing, posterior branch bent a little posteriorly at its tip; fifth longitudinal fork rather short, anterior branch about twice the length of posterior.

Hab.—Sydney (Skuse). December.

281. CERATOPOGON NIGELLUS, sp.n. (Pl. XIII., fig. 38).

♀.—Length of antennæ.....	0·017 inch	...	0·42 millimètre.
Expanse of wings.....	0·037 × 0·015	...	0·92 × 0·38
Size of body.....	0·040 × 0·010	...	1·01 × 0·25

Black, opaque; scutellum ochreous-yellow, and generally a very small spot of same colour or paler at humeri. Halteres white, base of club and stem dusky brown or black. Abdomen not quite twice length of thorax, brownish-black, sparingly clothed with yellowish hairs. Tibiæ and tarsi more or less yellowish-brown. In fore legs tibia nearly thrice the length of metatarsus. Wings nearly length of entire body, pellucid, almost hyaline, with a delicate brownish tint and brassy roseous reflections; costal, first two longitudinal veins, middle cross-vein, and basal portion of fourth longitudinal yellowish-brown. Auxiliary vein pale and indistinct; first longitudinal vein reaching costa almost opposite but immediately before base of fifth longitudinal fork; second joining a little beyond, at a point in middle of anterior border;

inner marginal cell obliterated by confluence of the veins; marginal cell almost obliterated; indistinct trace of third longitudinal fork, posterior branch close and almost parallel to anterior branch of fourth longitudinal; latter fork very pale, apparently sessile, the posterior branch detached at its base, branches straight at tip, anterior joining immediately above apex of wing, posterior scarcely reaching margin; anterior branch of fifth longitudinal fork scarcely twice the length of posterior.

Hab.—Berowra, N.S.W. (Masters). Two specimens.

*** Second longitudinal vein joining costa beyond middle of anterior border.*

282. CERATOPOGON 10-PUNCTATUS, sp.n. (Pl. XIII., fig. 39).

♀.—Length of antennæ.....	0·021 inch	...	0·52 millimètre.
Expanse of wings.....	0·055 × 0·021	...	1·39 × 0·52
Size of body.....	0·065 × 0·020	...	1·66 × 0·50

Black, opaque; scutellum brown; legs deep brown; tarsi yellowish-brown. Thorax with three longitudinal double rows of brown or blackish hairs, divergent posteriorly. Halteres whitish at apex of club. Abdomen short, robust, clothed with brown hairs, second to sixth segments with a small whitish spot on each side, those on fifth very small. In fore legs tibia $\frac{1}{3}$ longer than the metatarsus. Wings shorter than entire body, hyaline, rather densely covered with brownish hairs, with rich cupreous (and somewhat violaceous) reflections; costal, first two longitudinal veins, middle cross-vein and basal portion of fourth longitudinal brown or brownish. Auxiliary vein pale and indistinct; first longitudinal reaching costa almost opposite but immediately before base of fifth longitudinal fork; second longitudinal incrassated, reaching costa somewhat beyond middle of anterior border, and opposite tip of posterior branch of fifth longitudinal fork; inner marginal cell obliterated by confluence of veins; marginal cell almost closed extremely narrow; complete fork, and portion of petiole of third

longitudinal present, pale but distinct, its posterior branch terminating at tip of anterior branch of fourth longitudinal fork; latter pale, indistinct at the base, anterior branch straight, joining immediately above apex of wing; posterior branch arcuating posteriorly, joining wing-margin about mid-way between tips of two anterior branches; distinct wing-fold close and anterior to fifth longitudinal and its anterior branch; posterior branch, of fifth longitudinal fork straight, anterior arcuated, not twice the length of posterior.

Hab.—Glenbrook, Blue Mountains, N.S.W. (Masters).

Obs.—Apparently an uncommon, but easily recognised species.

283. CERATOPOGON SYDNEYENSIS, sp.n. (Pl. XIII., fig. 40).

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·055 × 0·016	...	1·39 × 0·40
Size of body.....	0·055 × 0·020	...	1·39 × 0·50
♀.—Length of antennæ.....	0·017 inch	...	0·42 millimètre.
Expanse of wings.....	0·045 × 0·018	...	1·13 × 0·45
Size of body.....	0·055 × 0·020	..	1·39 × 0·50

♂ and ♀.—Antennæ, head, and palpi in ♂ black, in ♀ brown. Thorax brown, darker in ♂ than ♀, dull, with minute pale yellow pubescence; pleuræ and metanotum dark brown; scutellum testaceous or ochreous-brown. Halteres white, stem brownish. Abdomen short, robust in ♀, brown, dull, clothed with yellowish hairs. Legs light brown, with brownish hairs. In fore legs tibia $\frac{1}{3}$ longer than metatarsus. Wings about length of body, hyaline, densely covered with brownish-yellow pubescence, richly iridescent in ♀, weaker in ♂; veins yellowish-brown. Auxiliary vein not distinguishable; first longitudinal vein reaching costa before base of fifth longitudinal fork; second longitudinal reaching costa somewhat beyond middle of anterior border, in ♂ just beyond base of fifth longitudinal fork, in ♀ opposite tip of

posterior branch of the latter; extremely indistinct trace of third longitudinal fork in ♂; fourth longitudinal fork indistinct at base, anterior branch reaching margin, in ♂ immediately above, in ♀ at the apex of the wing, posterior branch joining mid-way between tips of anterior branches of the two forks; fifth fork somewhat narrow, posterior branch in ♂ not quite reaching wing-margin.

Hab.—Sydney and environs (Skuse). December and January.

284. CERATOPOGON ÆRATIPENNIS, sp.n. (Pl. XIII., figs. 41 and 42).

♂.—Length of antennæ.....	0·030 inch	...	0·76 millimètre.
Expanse of wings.....	0·045 × 0·014	...	1·13 × 0·35
Size of body.....	0·040 × 0·017	...	1·01 × 0·42
♀.—Length of antennæ.....	0·015 inch	...	0·38 millimètre.
Expanse of wings.....	0·040 × 0·015	...	1·01 × 0·38
Size of body.....	0·050 × 0·017	...	1·27 × 0·42

♂ and ♀.—Black, opaque; scutellum ochre-yellow. Thorax with yellowish-brown hairs. Halteres brown. Abdomen about $\frac{1}{3}$ longer than thorax, clothed with yellowish-brown hairs. Legs light brown, the femora or genua sometimes darker. In fore legs tibia twice the length of metatarsus. Wings in ♂ longer, in ♀ shorter than entire body, pellucid with a delicate yellowish tint, brassy reflections, not so densely pubescent in ♂; costal, first two longitudinal veins, middle cross-vein and basal portion of fourth longitudinal pale brownish. Auxiliary vein very pale and indistinct; second longitudinal vein in ♂ terminating in costa immediately before base of fifth longitudinal fork, in ♀ immediately beyond; the latter vein in both sexes joining immediately beyond middle of anterior border; marginal cell almost, and inner marginal entirely, obliterated by the confluence of the veins; indistinct traces of third longitudinal fork; fourth longitudinal fork obliterated at the base, branches indistinct,

the anterior branch reaching margin a little above apex of wing ; fifth longitudinal indistinct.

Hab.—Hexham Swamps, near Newcastle, N.S.W. (Skuse). Common in April.

Obs.—Somewhat allied to *C. scutellatus*, Meig.

285. CERATOPOGON MARMORATUS, sp.n. (Pl. xiv., fig. 43).

♀.—Length of antennæ.....	0·057 inch	...	0·68 millimètre.
Expanse of wings.....	0·057 × 0·025	...	1·44 × 0·62
Size of body.....	0·057 × 0·017	...	1·44 × 0·42

Brown, sometimes very dark brown. Thorax pruinose, with four indistinct spots without that appearance, two short longitudinal lateral ones about the middle, and two median contiguous diamond-shaped spots on the posterior half ; sparingly covered with fine pale yellow hairs. Halteres more or less ochreous-yellow. Abdomen about twice the length of thorax, clothed with yellowish bands. Legs light brown, tarsi, more or less yellowish. Femora with an indistinct yellowish ring just before tip, dark brown at tip. Tibiæ yellowish at base. In fore legs tibia twice the length of metatarsus. Wings the length of entire body, pellucid, with pale brownish-grey tint, brown between tip of second longitudinal vein (from opposite base of fifth longitudinal fork) and costa, and with several hyaline spots between the other veins ; one includes the middle cross-vein, a larger one under brown costal spot and continuing round to costa, and a smaller round spot between last and apex of wing, two in fork of fourth longitudinal, three or four between fourth and fifth longitudinal veins, one on posterior margin between latter fork, and lastly three or four spots between fifth longitudinal and posterior angle ; with a violaceous reflection (except pale spots) when viewed at a certain obliquity ; densely clothed with yellowish hairs ; veins pale brownish. Auxiliary vein indistinct ; first longitudinal much curved at the marginal cross-vein, reaching

costa considerably beyond middle of anterior border and beyond tip of posterior branch of fifth longitudinal fork; second longitudinal joining costa opposite middle anterior branch of fifth longitudinal fork; indistinct trace of third longitudinal fork; middle cross-vein long, not very oblique; anterior branch of fourth longitudinal nearly straight, reaching margin somewhat below apex of wing, posterior branch detached, indistinct; branches of fifth longitudinal fork disappearing before the margin.

Hab.—Sydney and several localities in N.S.W. (Masters and Skuse).

Obs.—A very common insect. Some smaller specimens obtained by Mr. Masters at Blue Mountains differ in darker body and somewhat in wing-spots, but as they are not in good preservation I cannot say if they belong to this species.

286. CERATOPOGON MOLESTUS, sp.n. (Pl. xiv., fig. 44).

♀.—Length of antennæ.....	0.015 inch	...	0.38 millimètre.
Expanse of wings.....	0.045 × 0.020	...	1.13 × 0.50
Size of body.....	0.050 × 0.015	...	1.27 × 0.38

Deep brown, the legs lighter brown. Thorax with a dull greenish tinge, sparingly covered with yellow hairs. Halteres more or less yellowish. Abdomen short, clothed with yellowish hairs. Tarsi more or less yellowish. In fore legs tibia more than twice the length of metatarsus. Wings about the length of entire body, pellucid, greyish, brownish between tip of second longitudinal and costal from opposite base of fifth longitudinal fork, and with several hyaline spots; the spots very much as in *C. marmoratus*, except that there are two immediately above anterior branch of fourth longitudinal fork, and the spot in fifth longitudinal fork does not or scarcely touches wing-margin; brilliantly iridescent when viewed at a certain obliquity; moderately covered with yellow hairs; veins brownish-yellow. Auxiliary vein indistinct; first longitudinal curved gently upwards to the costa, joining considerably

beyond middle of anterior border and somewhat beyond tip of posterior branch of fifth longitudinal fork; second longitudinal reaching costa beyond middle of anterior branch of fifth longitudinal fork; extremely indistinct trace of third longitudinal fork; middle cross-vein long, not very oblique; anterior branch of fourth longitudinal almost straight, reaching margin at apex of wing, posterior branch detached; posterior branch of fifth longitudinal fork not quite reaching margin.

Hab.—Sydney and generally in N.S.W. (Masters and Skuse); Como, N.S.W. (Dr. Katz). Common from December to April.

Obs.—Generally called "Sand-fly," and a particularly annoying insect in many localities. Some specimens in spirit received from Dr. T. Bancroft of Brisbane seem to belong to this species, which is apparently allied to the European *C. arcuatus*, Winn.

B. WINGS ENTIRELY NAKED.

287. CERATOPOGON TIGRINUS, sp.n. (Pl. XIV., fig. 45).

♀.—Length of antennæ..... 0·015 inch ... 0·38 millimètre.

Expanse of wings..... 0·040 × 0·013 ... 1 01 × 0·32

Size of body..... 0·045 × 0·010 ... 1·13 × 0·25

Antennæ, head, clypeus, and palpi black. Thorax brown, dull, with two longitudinal stripes and three irregular lateral spots of ochreous; sparingly covered with short brown hairs; pleuræ, pectus, and metanotum dark brown; scutellum light brown. Halteres brown. Abdomen short, robust, dusky brown, clothed with brown hairs. Legs brown, tips of femora and tarsi yellowish; posterior tibiæ incrassated. In fore legs tibia somewhat more than twice the length of metatarsus. Wings about length of entire body, hyaline, glabrous, with opaline reflections; veins distinct, brownish. Auxiliary vein terminating in costa mid-way between base of second longitudinal and tip of first longitudinal; latter reaching costa somewhat beyond middle of anterior border, and opposite middle of anterior branch of fifth longitudinal fork; marginal cross-vein situated close to tip of first longitudinal;

marginal cell about $\frac{1}{3}$ longer than inner marginal, of equal width ; second longitudinal meeting costa somewhat beyond tip of anterior branch of fifth longitudinal fork ; slight trace of portion of anterior branch of third longitudinal, appearing almost like a wing-fold ; fork of fourth longitudinal with a short petiole, base of fork opposite tip of posterior branch of fifth longitudinal, the anterior branch reaching margin immediately below apex of wing ; anterior branch of fifth longitudinal fork short, arcuated.

Hab.—Berowra, N.S.W. (Skuse). January.

288. CERATOPOGON IMPERFECTUS, sp.n. (Pl. xiv., fig. 46).

♀.—Length of antennæ.....	—	inch	...	—	millimètre.
Expanse of wings.....	..	0.031 × 0.011	...	0.62 × 0.27	
Size of body.....		0.025 × 0.008	...	0.62 × 0.20	

Antennæ lost. Black or very deep brown, opaque ; legs yellowish ; halteres pale yellow. Abdomen short, the width of the thorax. In fore legs tibia not (?) twice the length of metatarsus. Wings the length of entire body, naked, cuneiformly narrowed at base, pellucid, with a delicate brownish tint, and rich cupreous reflections ; brown between costal and second longitudinal veins for some distance before their tip ; costal, first two longitudinal veins, middle cross-vein and basal half of fourth longitudinal brownish. Auxiliary vein invisible ; first longitudinal reaching costa at middle of anterior margin, but considerably before base of fifth longitudinal fork ; second longitudinal meeting costa almost opposite tip of anterior branch of fifth longitudinal fork ; basal portion of fourth longitudinal, middle cross-vein and second longitudinal almost in one straight line ; no trace of third longitudinal ; anterior branch of fourth longitudinal entirely missing, posterior branch extremely pale and indistinct, disappearing close to margin a little below apex of wing ; fifth longitudinal extremely pale and indistinct, fork very short, both branches disappearing much before the wing-margin, the posterior branch very short.

Hab.—Middle Harbour, near Sydney (Skuse). One specimen in September.

II. MARGINAL CROSS-VEIN WANTING.

289. CERATOPOGON LATIPENNIS, sp.n. (Pl. xiv., fig. 47).

♀.—Length of antennæ.....	0·027 inch	...	0·68 millimètre.
Expanse of wings.....	0·075 × 0·030	...	1·89 × 0·76
Size of body.....	0·060 × 0·020	...	1·54 × 0·50

Antennæ, head, clypeus, and palpi light brown; flagellar joints of antennæ more yellowish than the rest. Thorax and scutellum pale dull brownish-ochreous; metanotum brownish; thorax sparingly beset with yellowish hairs; pleuræ and pectus pale brownish or brownish-ochreous. Halteres white. Abdomen short, brown, clothed with yellowish hairs. Legs yellow, all joints slightly tipped with brown, tibiæ also slightly at the base. In fore legs tibia more than twice length of metatarsus. Ungues very long, aculeate, deep brown. Wings very broad, longer than entire body, pellucid with a faint brownish tint, with minute yellowish pubescence chiefly in apical half; veins pale brownish-yellow, first and second longitudinal veins marked with brown immediately before middle cross-vein, also first longitudinal again mid-way between first spot and costa; second longitudinal enormously distended and brown at tip. Auxiliary vein extremely pale and indistinct; first longitudinal reaching costa opposite base of fourth longitudinal fork and mid-way between base and tip of second longitudinal; latter joining costa beyond middle of anterior border; indistinct trace of third longitudinal fork; anterior branch of fourth longitudinal fork reaching margin at apex of wing, posterior detached, or very indistinct at base, joining margin mid-way between tips of anterior branches of fourth and fifth forks; latter fork broad, both branches arcuated, the posterior not quite reaching the margin.

Hab.—Berowra, N.S.W. (Masters). One specimen.

EXPLANATION OF PLATES.

PLATE XI.

- Fig. 1. Wing of *Chironomus occidentalis* (♀).
 Fig. 2. „ „ *delinificus* (♂).
 Fig. 3. „ „ *pulcher* (♀).
 Fig. 4. „ „ *seorsus* (♀).
 Fig. 5. „ „ *erebeus* (♀).
 Fig. 6. „ „ *Tepperi* (♀).
 Fig. 7. „ „ *oresitrophus* (♂).
 Fig. 8. „ „ *oresitrophus* (♀).
 Fig. 9. „ „ *brevis* (♀).
 Fig. 10. „ *Orthocladius annuliventris* (♂).
 Fig. 11. „ „ *numerosus* (♂).
 Fig. 12. „ „ *venustulus* (♂).
 Fig. 13. „ „ *insolidus* (♂).
 Fig. 14. „ „ *pullulus* (♀).

PLATE XII.

- Fig. 15. Wing of *Doloplastus monticola* (♂).
 Fig. 16. „ *Camptocladius terjugus* (♀).
 Fig. 17. „ „ *crassipennis* (♀).
 Fig. 18. „ „ *invenustulus* (♀).
 Fig. 19. „ *Tanytarsus montanus* (♂).
 Fig. 20. „ „ *inextentus* (♂).
 Fig. 21. „ „ *inextentus* (♀).
 Fig. 22. „ „ *fuscithorax* (♂).
 Fig. 23. „ *Metriocnemus nitidulus* (♀).
 Fig. 24. „ *Tanypus Mastersi* (♀).
 Fig. 25. „ *Isoplastus notabilis* (♂).
 Fig. 26. „ „ *formulosus* (♂).
 Fig. 27. „ *Procladius paludicola* (♂).
 Fig. 28. „ „ *pictipennis* (♂).

PLATE XIII.

- Fig. 29. Wing of *Leptoconops stygius* (♀).
 Fig. 30. „ „ *Ceratopogon albopunctatus* (♂).
 Fig. 31. „ „ „ *æqualis* (♂).
 Fig. 32. „ „ „ *saltivagus* (♀).
 Fig. 33. „ „ „ *rhynchops* (♀).
 Fig. 34. „ „ „ *Mastersi* (♂).
 Fig. 35. „ „ „ *insignis* (♀).
 Fig. 36. „ „ „ *subnitidus* (♀).
 Fig. 37. „ „ „ *minusculus* (♂).
 Fig. 38. „ „ „ *nigellus* (♀).
 Fig. 39. „ „ „ *10-punctatus* (♀).
 Fig. 40. „ „ „ *Sydneyensis* (♂).
 Fig. 41. „ „ „ *ceratipennis* (♂).
 Fig. 42. „ „ „ *ceratipennis* (♀).

PLATE XIV.

- Fig. 43. Wing of *Ceratopogon marmoratus* (♀).
 Fig. 44. „ „ „ *molestus* (♀).
 Fig. 45. „ „ „ *tigrinus* (♀).
 Fig. 46. „ „ „ *imperfectus* (♀).
 Fig. 47. „ „ „ *latipennis* (♀).
 Fig. 48. Diagram (wing of *Chironomus*) illustrating the terminology of the venation.
 Fig. 49. Diagram (wing of *Tanypus*) illustrating the terminology of the venation.

PLATE XIV. bis.

- Fig. 50. Diagram (wing of *Procladius*) illustrating the terminology of the venation.
 Fig. 51. Diagram (wing of *Leptoconops*) illustrating the terminology of the venation.
 Fig. 52. Diagram (wing of *Ceratopogon*) illustrating the terminology of the venation.
 Fig. 53. Diagram (wing of *Ceratopogon*) illustrating the terminology of the venation.

Veins.

- Costa (*v. costalis*). A, h.
 Transverse shoulder-vein (*v. trans. humeralis*). x.
 Auxiliary (*v. auxiliaris*). a, s.
 First longitudinal (*v. long. 1ma*). a, B.
 Marginal cross-vein (*v. trans. marginalis*). x x.
 Second longitudinal (*v. long. 2da*). b, C.
 Third longitudinal (*v. long. 3a*). b, D.
 Middle cross-vein (*v. trans. media*). x x x.
 Fourth longitudinal (*v. long. 4a*). c, d, e.
 Posterior cross-vein (*v. trans. posterior*). x x x x.
 Fifth longitudinal (*v. long. 5a*). c, f, g.

Obs.—Following the plan adopted by Winnertz in his treatment of the species of *Ceratopogon* (Linn. Entom. VI. p. 13), I have by means of micro-metrical measurements divided the wings in the species of all the genera into one hundred parts, thereby being enabled to tabulate the respective positions of the tips of the first, second, and third longitudinal veins between the base and apex of the wing. In the plates I have represented all the wings on the same scale of one hundred divisions, which will be found more useful than if the relative size of the wings had been retained.